



**U.S. Army Corps
of Engineers**
Tulsa District

Public Notice

Reply To:

SWT-2017-00214
Public Notice No.

U.S. Army Corps of Engineers
ATTN: Regulatory Office
2488 East 81st Street
Tulsa, Oklahoma 74137-4290

July 23, 2018
Public Notice Date

August 22, 2018
Expiration Date

PURPOSE

The purpose of this public notice is to inform you of a proposal for work in which you might be interested and to solicit your comments and information to better enable us to make a reasonable decision on factors affecting the public interest.

SECTION 10

The U.S. Army Corps of Engineers is directed by Congress through Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) to regulate all work or structures in or affecting the course, condition, or capacity of navigable waters of the United States. The intent of this law is to protect the navigable capacity of waters important to interstate commerce.

SECTION 404

The U.S. Army Corps of Engineers is directed by Congress through Section 404 of the Clean Water Act (33 U.S.C. 1344) to regulate the discharges of dredged and fill material into all waters of the United States. These waters include lakes, rivers, streams, mudflats, sandflats, sloughs, wet meadows, natural ponds, and wetlands adjacent to other waters. The intent of the law is to protect these waters from the indiscriminate discharge of material capable of causing pollution and to restore and maintain their chemical, physical, and biological integrity.

NOTICE TO PUBLISHERS

This public notice has been provided as a public service and may be reprinted at your discretion. However, any cost incurred as a result of reprinting or further distribution shall not be a basis for claim against the Government.



**DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, TULSA DISTRICT
2488 EAST 81ST STREET
TULSA, OKLAHOMA 74137-4290**

Application No. SWT-2017-00214

**JOINT PUBLIC NOTICE
U.S. ARMY CORPS OF ENGINEERS
AND
OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ)
(30-DAY COMMENT PERIOD)**

Interested parties are hereby notified that the District Engineer (DE) has received an application for a Department of the Army (DA) permit and water quality certification pursuant to Sections 404 and 401 of the Clean Water Act (CWA). The ODEQ hereby incorporates this public notice and procedure as its own public notice and procedure by reference thereto.

Applicant: Mr. Ed Fite
Grand River Dam Authority (GRDA)
PO Box 292
Tahlequah, OK 74465-0292

Agent: Mr. Clint Porter
Blackbird Environmental, LLC
PO Box 720100
Norman, OK 73070

Location: The proposed project is in the northwest 1/4 of Section 17, Township 19 North, Range 26 East near Watts, Adair County, Oklahoma. The project site can be found on the Siloam Springs, Arkansas - Oklahoma 7.5 Minute USGS Quadrangle map at north latitude 36.130246 and west longitude -94.564426.

Project Description: The application is for the placement of fill material in waters of the United States, for the proposed construction of the Lake Frances Whitewater Park. Approximately 2 acres of temporary fill and 1 acre of permanent fill would occur in the Illinois River and approximately 1.633 acres of permanent fill would occur in adjacent Palustrine areas, in order to accommodate the proposed project.

Purpose: The basic purpose of this work is to construct a whitewater park. The project is not a water dependent activity.

The overall project purpose is the construction of a whitewater park that would mitigate the known hazard surrounding the existing Lake Frances Dam, while providing recreational opportunity and promoting economic development in northeastern Oklahoma, and maintaining the water surface elevation required for the operation of the

City of Siloam Springs sole water intake facility/pump station located approximately 1,000 feet upstream of the Lake Frances Dam.

Summary Table of Impacts:

Proposal					
Number or Location	Impact Activity	Type of Water	Type of Fill Material	Qty of Material cys below OHWM	Footprint (ac)
Illinois River, PRB1-1, PRB1-2	Fill	Open Water	Riprap, Rock, Boulders, Grout, Concrete	See plans, attached	3.388
PEM1-1, PSS1-1, PFO1-1	Fill	Wetlands	Riprap, Rock, Boulders, Grout, Concrete	See plans, attached	1.245
Total					4.633
cubic yards (cys), ordinary high water mark (OHWM), acre (ac), linear feet (lf)					

Description of Work: The proposed work involves a 1,200-foot bypass channel with an alignment that follows a low area in the overbank. Dam hazard mitigation consists of building grouted boulder steps downstream of the dam crest. These steps would eliminate the formation of overly retentive hydraulics and decrease the drowning hazards at the dam.

The proposed dam mitigation would also provide several benefits to the existing diversion and dam:

- a. The stepped spillway would provide additional structural support to the existing dam as the mass would counteract hydrostatic pressures, sliding, overturning, etc.
- b. The stepped spillway would greatly reduce the continuing erosion and degradation of the concrete dam/spillway.
- c. Filling and armoring the two arch-structures (and possibly the abandoned wet well) would reduce the risk of failure of these features - potentially compromising the functionality of the City's intake.
- d. The existing abutment north of the dam would be armored and raised thereby reducing uncontrolled flow and erosion of the area behind the north dam abutment.
- e. The proposed whitewater channel would serve as a way to route water around the dam, providing easier access to the dam for inspection and maintenance.

The whitewater course would create a navigable bypass around the existing dam along with a venue with high-quality whitewater features of national caliber. Proposed amenities include site parking, a bathhouse, and takeout points adjacent to the river. Because of the dam hazard mitigation, users will be able to make use of flatwater activities on the upstream and downstream ends of the course.

Avoidance and Minimization Information: The applicant provided the following statement with regard to how avoidance and minimization of impacts to aquatic resources was incorporated into the project plan:

Best management practices would be used in the construction and implementation of the coffer dams and dewatering. These would include (but not limited to):

1. Development of a Storm Water Management Plan (SWMP)
2. Settlement basins for the pumped discharge from dewatering efforts
3. Use of granular materials in construction of the cofferdams
4. Sediment and Erosion Control BMPs related to site and construction access such as:
 - Slope Stabilization
 - Sediment Barriers
 - Flow Velocity Controls
 - Sedimentation Basins
 - Silt Fences
 - Check Dams

All clearing and grubbing activities within the mature forest would occur between the beginning of November and end of March. No tree removal would occur April through October. In addition, all work within the Illinois River, not including the whitewater course, would occur between the beginning of November and end of March.

Boating activities would be focused on kayaking, surfing, stand-up paddle boarding and rafting. No motorized pumps will be required to operate any facilities in and/or immediately around the proposed course. No lights will be constructed and/or installed around the course and/or immediately adjacent to the Illinois River. The only proposed lighting will be constructed around the parking area north of the proposed course.

Mitigation: Furthermore, the applicant proposes the following as compensatory mitigation for the unavoidable impacts to aquatic resources expected from the proposed project:

The preferred action would result in the placement of fill material into the Illinois River to mitigate a dangerous, overly-retentive hydraulic forming downstream of the existing dam. The preferred action involves an approximate 1,200-foot bypass channel with an alignment that follows a low area in the overbank. Dam hazard mitigation consists of building grouted boulder steps downstream of the dam crest.

These steps would eliminate the formation of overly retentive hydraulics and decrease the drowning hazards at the dam.

The proposed dam mitigation would also provide several benefits to the existing diversion and dam:

1. The stepped spillway would provide additional structural support to the existing dam as the mass would counteract hydrostatic pressures, sliding, overturning, etc.
2. The stepped spillway would greatly reduce the continuing erosion and degradation of the concrete dam/spillway.
3. Filling and armoring the two arch-structures (and possibly the abandoned wet well) would reduce the risk of failure of these features - potentially compromising the functionality of the City's intake.
4. The existing abutment north of the dam would be armored and raised thereby reducing uncontrolled flow and erosion of the area behind the north dam abutment.
5. The proposed whitewater channel would serve as a way to route water around the dam, providing easier access to the dam for inspection and maintenance.

The excavation of the bypass channel would result in the placement and redistribution of fill material into adjacent emergent, forested and scrub shrub wetlands developed along the formerly scoured rock. The 1,200-foot bypass channel created within the existing, parent material would return ecological functions to the Illinois River. The bypass channel would allow for migration of aquatic vertebrates and invertebrates upstream. The course is not designed specifically as a fish migration structure; however, fish migration is likely. This migration would potentially allow for expansion of the endangered Neosho Mucket and/or threatened Rabbitsfoot Mussel. The additional linear feet of stream would support lotic ecosystem functions beyond potential vertebrate and invertebrate migration and create a diversity of stream morphology and flow structure. Periodic flooding would deposit sediments around the bypass channel and natural succession would result in additional wetland development along and around the proposed course. The applicant does not believe additional mitigation is required.

This mitigation plan is the applicant's proposal. The Corps has made no determination at this time with regard to the adequacy of the proposed mitigation relative to the federal mitigation rules and guidance, including Tulsa District's Mitigation and Monitoring Guidelines. Compensatory Mitigation for unavoidable impacts may be required to ensure that this activity requiring a Section 404 permit, if issued, complies with the Section 404 (b)(1) Guidelines. The Corps bears the final decision on the need for and extent of mitigation required if the project proposed herein is authorized.

Project Setting:

The project is located within the Dissected Springfield Plateau - Elk River Hills ecoregion of the Ozark Highlands. The Illinois River is an Outstanding Resource Water in the state of Oklahoma. The project site is located at the Lake Frances Dam.

Existing Condition:

The Lake Frances Dam design consists of two concrete abutments and a 150-foot long flat “ogee” crest. Existing access to the site is limited to an unmaintained dirt path. The Lake Frances Dam is a known hazard and has resulted in several deaths by drowning. Its geometry is typical of existing dams and often results in a dangerous, overly-retentive hydraulic forming downstream, commonly known as a “keeper” or a “reverse-roller”. Due to the hazardous condition of the dam, users are highly discouraged from recreating near the dam.

Cultural Resources: The DE is responsible to ensure compliance with the National Historic Preservation Act of 1966 (NHPA) (Public Law 89-665), as amended, and other cultural resources laws and Executive Orders. A preliminary review has been completed of the state’s records for the presence of sites included in, or eligible for, inclusion in the National Register of Historic Places, as well as the Oklahoma Landmark Inventory Database. Based on the preliminary information, there are known historic properties, as defined by the NHPA, in or within the vicinity of the proposed permit area. The Corps will comply with the NHPA to resolve any potential effects.

This notice has been provided to the Oklahoma State Historic Preservation Office, Oklahoma Archaeological Survey, Native American Tribal governments, and other interested parties. If you have information pertaining to these or other cultural resources within the permit area, please notify the Corps project manager identified within this notice to assist in a complete evaluation of potential effects. The DE will evaluate any input received and may require further investigations within the permit area, if warranted.

Threatened and Endangered Species: The following federally listed species are known to occur in the vicinity or are listed for the county in which the proposed action is located: Gray Bat (*Myotis grisescens*), Indiana Bat (*Myotis sodalist*), Northern Long-eared Bat (*Myotis septentrionalis*), Ozark Big-eared Bat (*Corynorhinus (=Plecotus townsendii ingens)*), Least Tern (*Sterna antillarum*), Piping Plover (*Charadrius melodus*), Red Knot (*Calidris canutus rufa*), Neosho Mucket (*Lampsilis rafinesqueana*), Rabbitsfoot (*Quadrula cylindrica cylindrica*), and American Burying Beetle (*Nicrophorus americanus*). A copy of this notice is being furnished to the U.S. Fish and Wildlife Service and appropriate state agencies.

We are currently assessing the potential effects of the proposed action on these species and will comply with the Endangered Species Act with regard to any effect of our decision on this permit application.

Evaluation Factors: The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts of the proposed activity and its intended use on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects thereof: conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownerships, and, in general, the needs and welfare of the people. A permit will be denied if the discharge does not comply with the Environmental Protection Agency's 404(b)(1) Guidelines. Subject to the 404(b)(1) Guidelines and any other applicable guidelines or criteria, a permit will be granted unless the DE determines that it would be contrary to the public interest.

Plans and Data: Plans showing the location of the proposed activity and other data are enclosed with this notice. If additional information is desired, it may be obtained from Mr. David Carraway, Tulsa District Corps of Engineers, ATTN: Regulatory Office, 2488 East 81st Street, Tulsa, OK 74137; or telephone 918-669-7400.

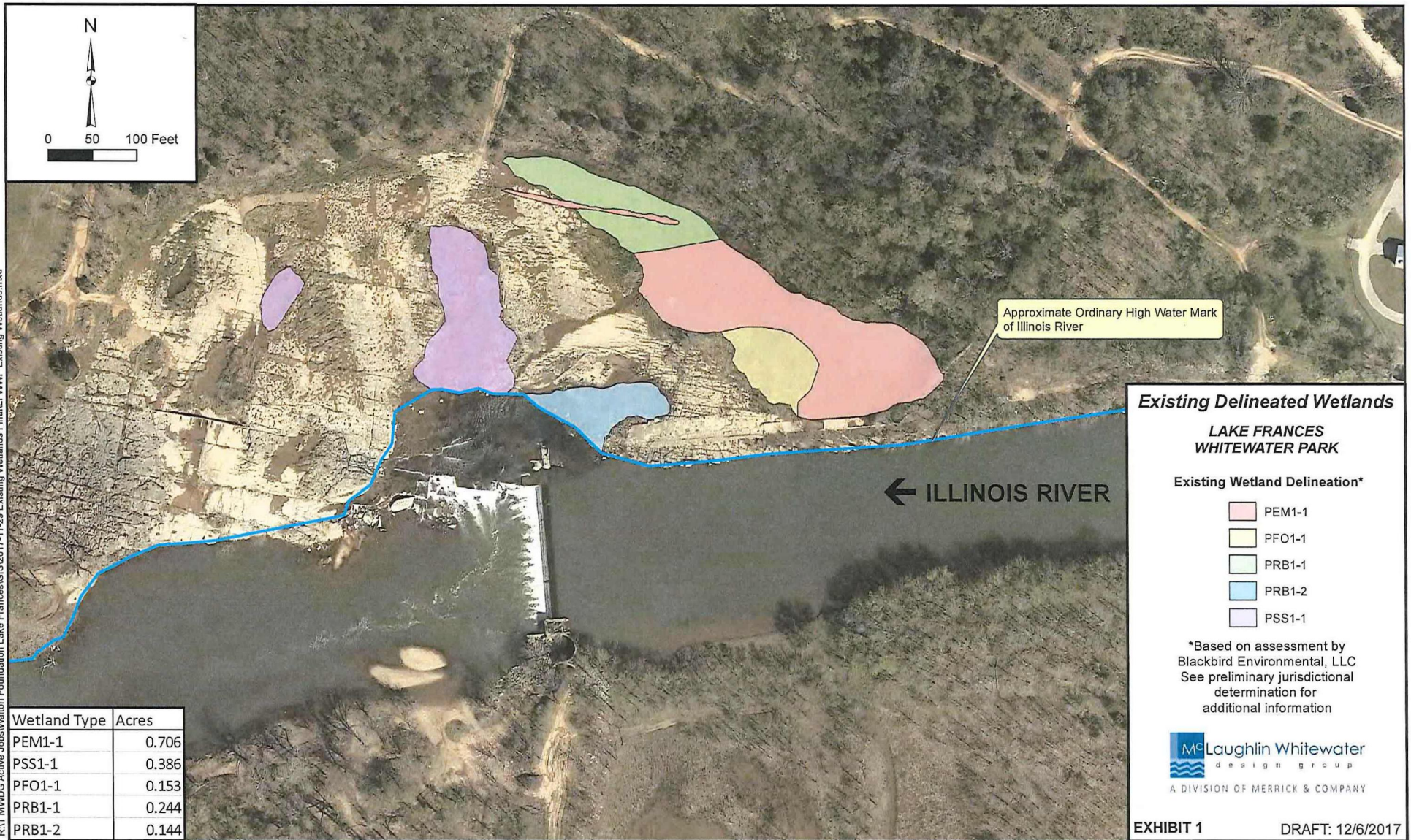
Comments: In order to consider and evaluate the impacts of this proposed activity the Corps is soliciting comments from the public, federal, state, and local agencies and officials, floodplain administrators, state historic preservation officers, Indian tribes, and other interested parties. Comments concerning the issuance of this permit should be received by the DE no later than the expiration date of this public notice. You may submit comments to mailing address Tulsa District Corps of Engineers, ATTN: Regulatory Office, 2488 East 81st Street, Tulsa, OK 74137; or email CESWT-RO@usace.army.mil, please include the public notice number SWT-2017-00214 in the subject line of the message.

Comments concerning water quality impacts will be forwarded to ODEQ for consideration in issuing a Section 401 Water Quality Certification for the proposed project. Work may **not** commence until decisions have been made on both Sections 401 and 404.

Andrew R. Commer
Chief, Regulatory Office

Enclosures

R:\1 MWDG Active Jobs\Walton Foundation Lake Frances\GIS\2017-11-29 Existing Wetlands Final\FWWP Existing Wetlands.mxd



Wetland Type	Acres
PEM1-1	0.706
PSS1-1	0.386
PFO1-1	0.153
PRB1-1	0.244
PRB1-2	0.144

Existing Delineated Wetlands

LAKE FRANCES WHITEWATER PARK

Existing Wetland Delineation*

- PEM1-1
- PFO1-1
- PRB1-1
- PRB1-2
- PSS1-1

*Based on assessment by
Blackbird Environmental, LLC
See preliminary jurisdictional
determination for
additional information

 **McLaughlin Whitewater**
design group
A DIVISION OF MERRICK & COMPANY

EXHIBIT 1

DRAFT: 12/6/2017

LAKE FRANCES WHITEWATER PARK

PRELIMINARY DESIGN

OCTOBER 2016

The
WALTON FAMILY
FOUNDATION

LEGEND

— 950 —	EXISTING CONTOUR MAJOR
— — —	EXISTING CONTOUR MINOR
— — —	EXISTING TREE
— — —	EXISTING BEDROCK
— — —	EXISTING SOIL
— — —	EXISTING WETLANDS
— — —	EXISTING RIPRAP
— 950 —	PROPOSED CONTOUR MAJOR
— — —	PROPOSED CONTOUR MINOR
— — —	PROPOSED TOP OF TIE OF BANK
— — —	PROPOSED CONCRETE (PLAN)
— — —	PROPOSED CONCRETE (SECTION)
— — —	PROPOSED GROUTED BOULDERS (PLAN)
— — —	PROPOSED GROUTED BOULDERS (SECTION)
— — —	PROPOSED CHANNEL ARMORING
— — —	PROPOSED SCULPTED CONCRETE CAP (PLAN)
— — —	PROPOSED SCULPTED CONCRETE CAP (SECTION)
— — —	PROPOSED SOIL RIPRAP
— — —	PROPOSED SUBSURFACE RIPRAP
— — —	PROPOSED NATURAL STONE PATH (PLAN)
— — —	PROPOSED RIPRAP OR GROUTED BOULDER SLOPE LINE
— — —	BOUNDARY OF GROUTED STRUCTURE
— — —	ESTIMATE OF TOP OF SHALE LAYER BASED ON BORING LOGS



VICINITY MAP
NTS

SHEET LIST TABLE

SHEET NUMBER	SHEET TITLE	SHEET DESCRIPTION
C-1	COVER SHEET	
C-2	SITE PLAN	
C-3	PLAN & PROFILE	STA. 0+00 TO STA. 3+50
C-4	PLAN & PROFILE	STA. 3+50 TO STA. 7+00
C-5	PLAN & PROFILE	STA. 7+00 TO STA. 13+00
C-6	ENTRANCE GATES	PLAN
C-7	ENTRANCE GATES	SECTIONS
C-8	TYPICAL FEATURE - WAVE	PLAN
C-9	TYPICAL FEATURE - WAVE	SECTIONS
C-10	TYPICAL FEATURE - HIGH PERFORMANCE	PLAN
C-11	TYPICAL FEATURE - HIGH PERFORMANCE	SECTIONS
C-12	TYPICAL FEATURE - TUBING	PLAN
C-13	TYPICAL FEATURE - TUBING	SECTIONS
C-14	JETTY DETAILS	
C-15	DAM HAZARD MITIGATION	PLAN
C-16	DAM HAZARD MITIGATION	TYPICAL SECTION
C-17	PUT-IN	PLAN & SECTION
C-18	TAKE-OUT	PLAN & SECTION
C-19	WEST ACCESS ROAD	PLAN & PROFILE
C-20	EAST ACCESS ROAD	PLAN & PROFILE
C-21	TYPICAL ROCK DETAILS	
C-22	MISC. DETAILS	
C-23	CONSTRUCTION DEWATERING & ACCESS PLAN	PHASE I
C-24	CONSTRUCTION DEWATERING & ACCESS PLAN	PHASE II
L-1	LANDSCAPE SITE PLAN	SHEET KEY
L-2	LANDSCAPE PLAN	
L-3.0	LANDSCAPE - SITEWORK DETAILS	
L-3.1	LANDSCAPE - SITEWORK DETAILS	
A-1	CHANGING & TOILET BUILDING	PLAN & SECTIONS
A-2	CHANGING & TOILET BUILDING	ELEVATIONS



Know what's below.
Call before you dig.

PREPARED BY:

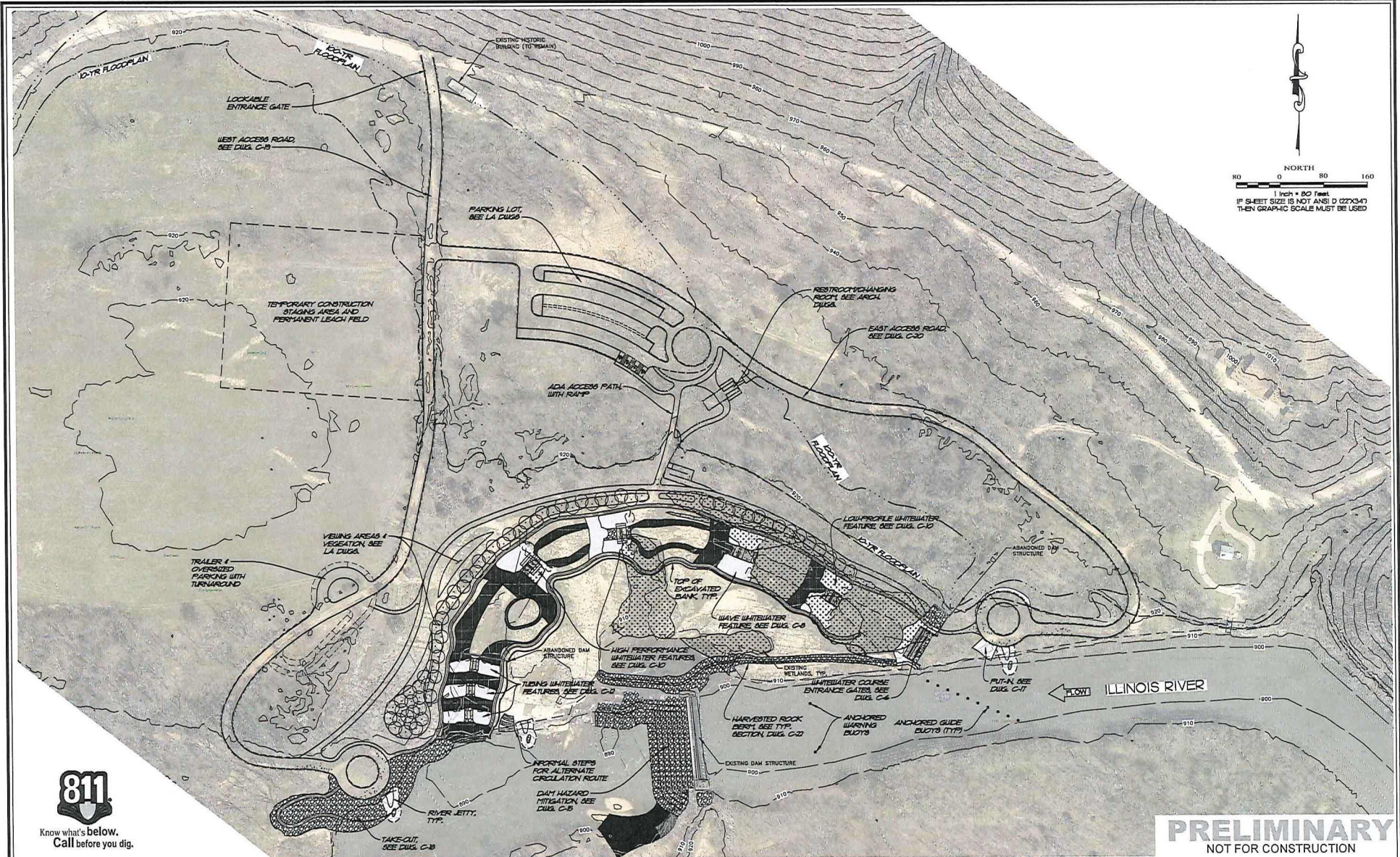


A DIVISION OF MERRICK & COMPANY
MERRICK PROJ. NO. 6541893301



PRELIMINARY C-1
NOT FOR CONSTRUCTION

SWT-2017-00214
GRDA, Proposed Lake Frances Whitewater Park
Illinois River
Adair County, OK
Enclosure 2 of 31



Number	Revision Description	By	Date	FOUNDATION THE WALTON FAMILY	LAKE FRANCES WHITewater PARK PRELIMINARY DESIGN	SITE PLAN	Loughlin Whitewater 17470 Almond St. Golden, CO 80401 TEL: 303.209.1000 FAX: 303.209.1001	DESIGN: REM DETAIL: MPA CHECK: BAN DATE: OCTOBER 2016	PROJECT NUMBER 6541893301	Drawing Number: C-2
1	STAGING AREA, LEACH FIELD, AND BUOYS	LRB	9/6/18							



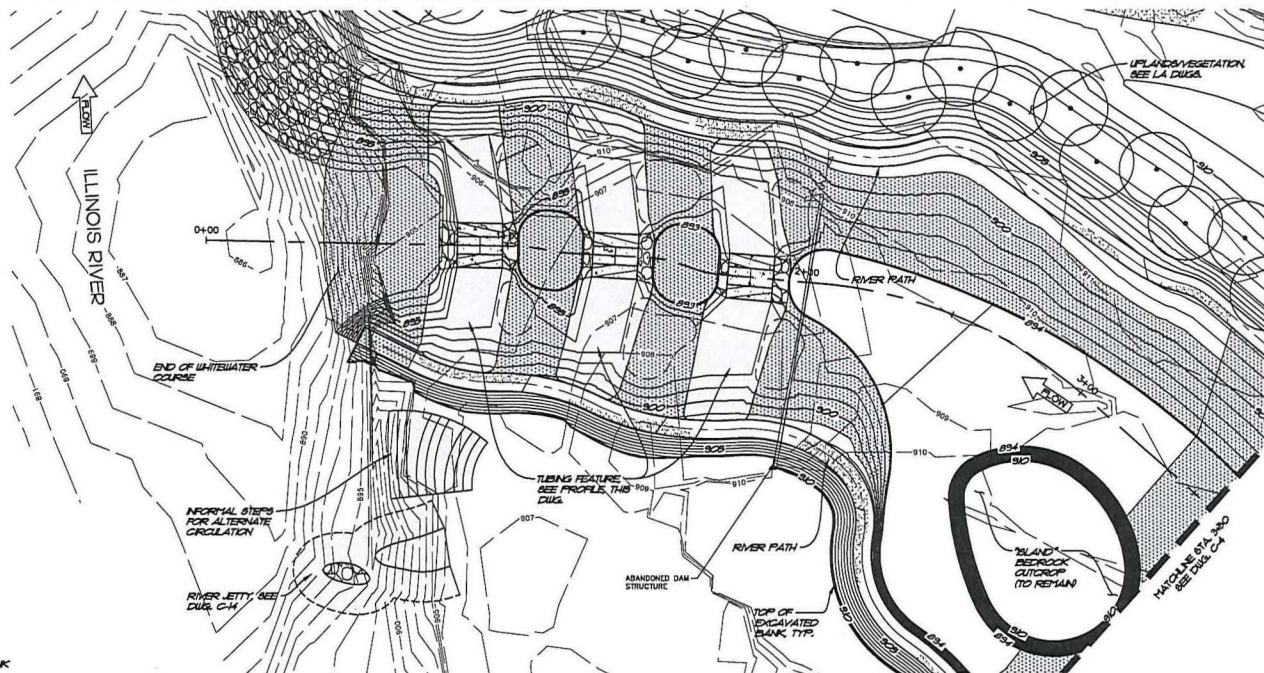
1 inch = 20 feet
IF SHEET SIZE IS NOT ANSI D (22X34)
THEN GRAPHIC SCALE MUST BE USED

LEGEND

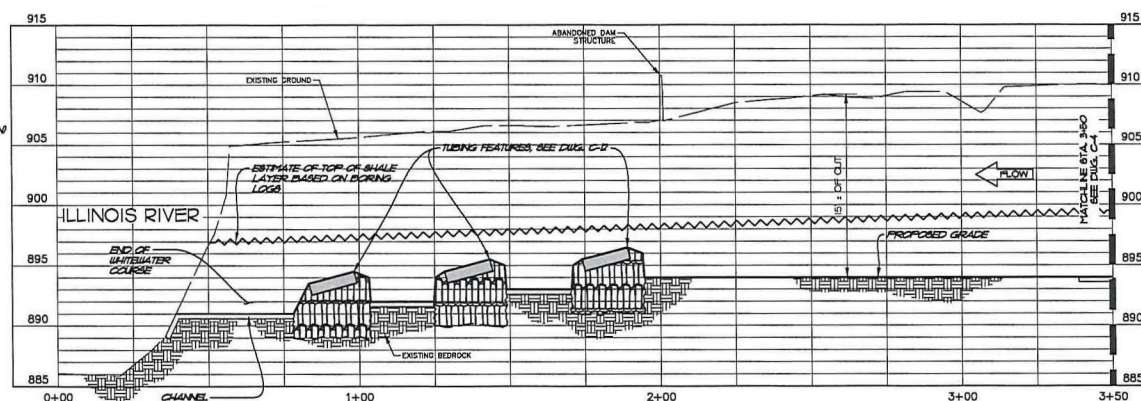
- 950 — EXISTING CONTOUR MAJOR
- — — EXISTING CONTOUR MINOR
- — — EXISTING TREE
- [Pattern] EXISTING BEDROCK
- [Pattern] EXISTING SOIL
- [Pattern] EXISTING WETLANDS
- [Pattern] EXISTING RIPRAP
- 880 — PROPOSED CONTOUR MAJOR
- — — PROPOSED CONTOUR MINOR
- - - PROPOSED TOP OR TOE OF BANK
- [Pattern] PROPOSED CONCRETE (PLAN)
- [Pattern] PROPOSED CONCRETE (SECTION)
- [Pattern] PROPOSED GROUTED Boulders (PLAN)
- [Pattern] PROPOSED GROUTED Boulders (SECTION)
- [Pattern] PROPOSED CHANNEL ARMORING
- [Pattern] PROPOSED SCULPTED CONCRETE CAP (PLAN)
- [Pattern] PROPOSED SCULPTED CONCRETE CAP (SECTION)
- [Pattern] PROPOSED SOIL RIPRAP
- [Pattern] PROPOSED SUBSURFACE RIPRAP
- [Pattern] PROPOSED NATURAL STONE PATH (PLAN)
- [Pattern] PROPOSED RIPRAP OR GROUTED BOLDER SLOPE LINE
- - - BOUNDARY OF GROUTED STRUCTURE
- ~~~~~ ESTIMATE OF TOP OF SHALE LAYER BASED ON BORING LOGS



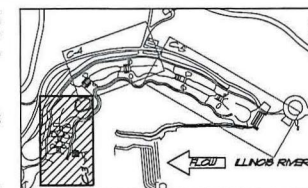
Know what's below.
Call before you dig.



PLAN
1" = 20'



PROFILE
HORIZ. 1" = 20'
VERT. 1" = 5'



KEY MAP

PRELIMINARY
NOT FOR CONSTRUCTION

Number	Revision Description	By	Date

THE WALTON FAMILY
FOUNDATION

LAKE FRANCES WHITEWATER PARK
PRELIMINARY DESIGN

PLAN & PROFILE
STA. 0+00 TO STA. 3+50



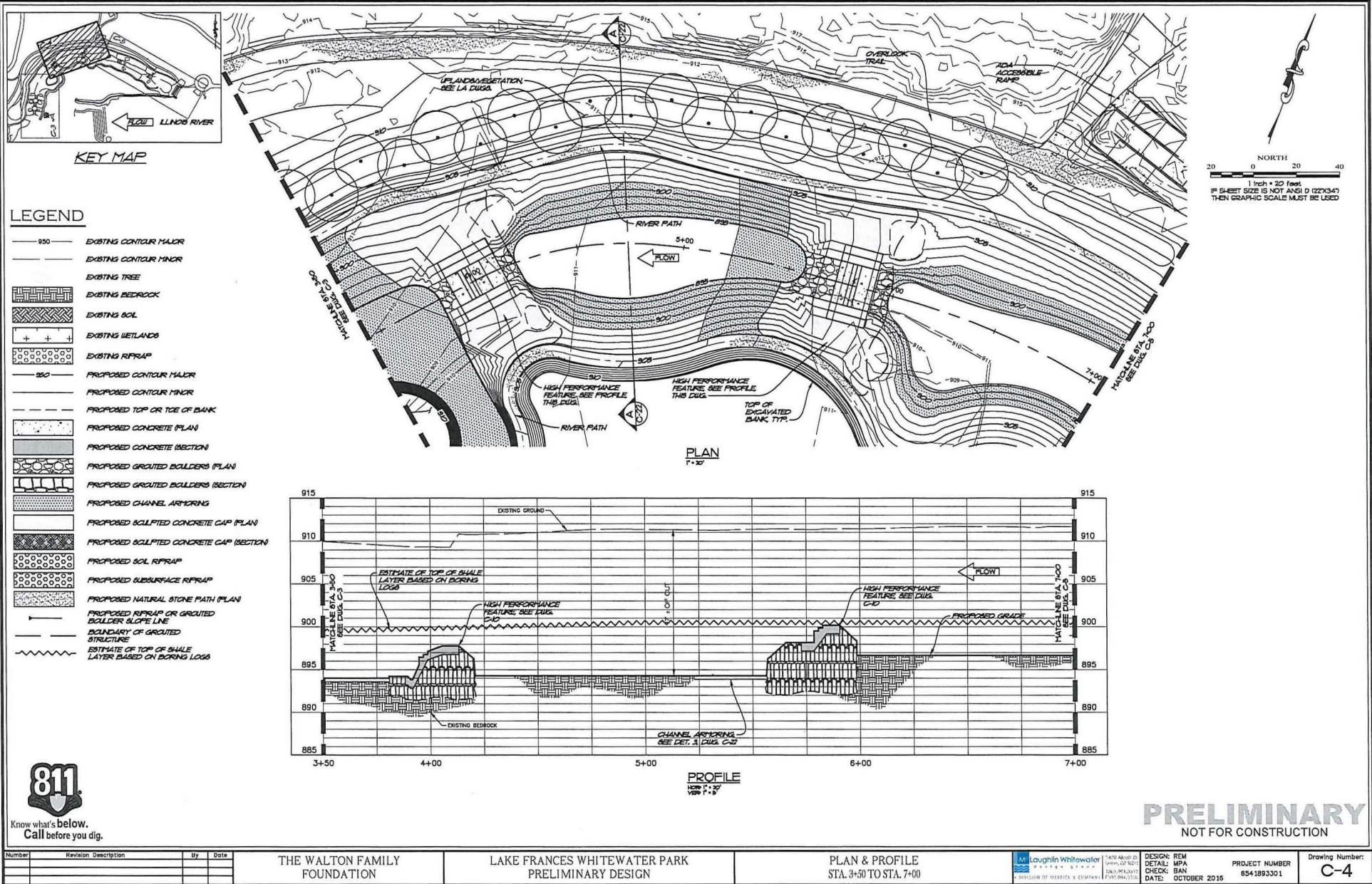
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DETAIL: MPA
CHECK: BAN
DATE: OCTOBER 2016

PROJECT NUMBER
6541893301

Drawing Number:
C-3

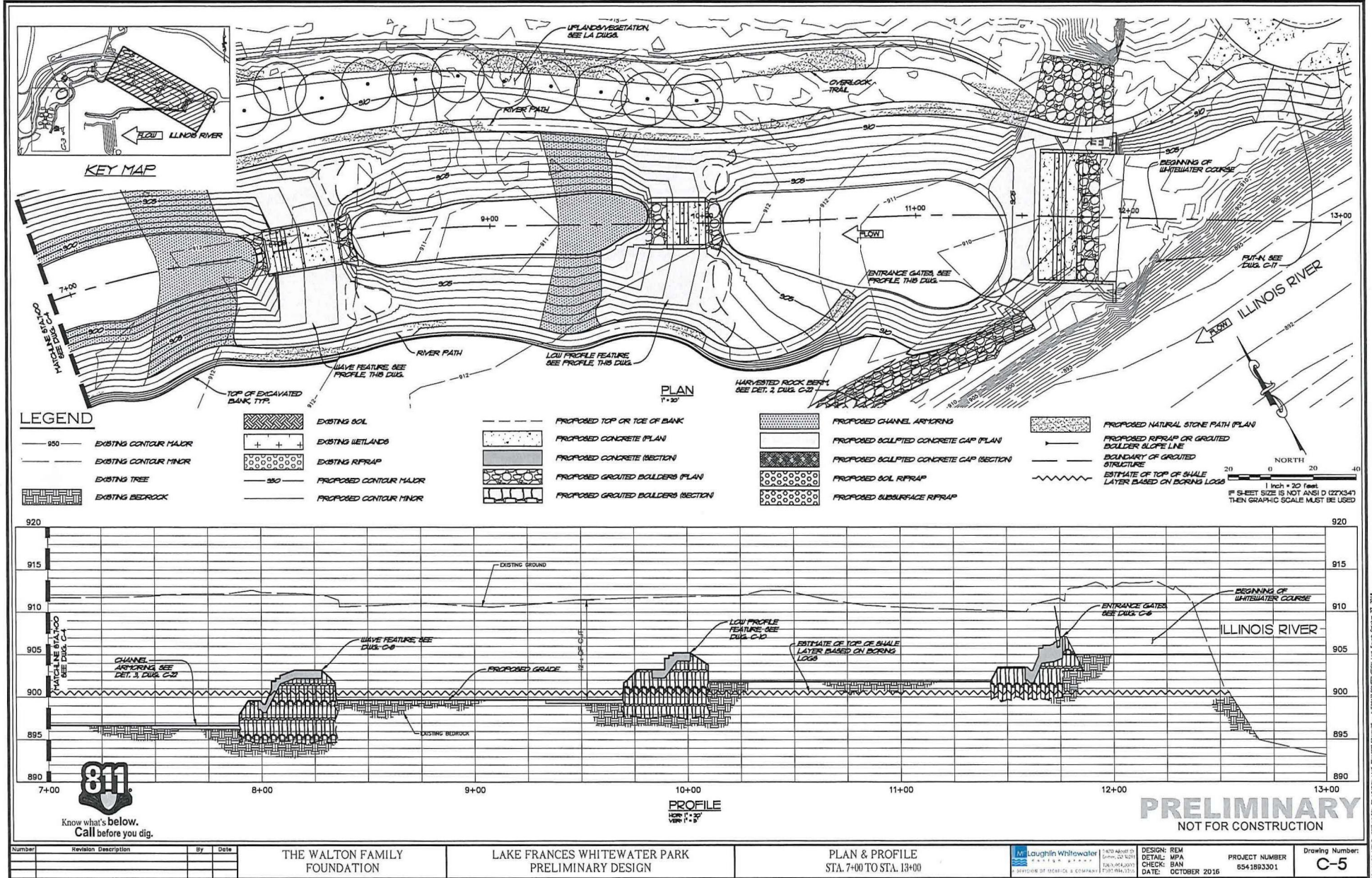
811 WORK ACTS: JOSEPH WALTON FOUNDATION, LAKE FRANCES WHITEWATER PARK - AUTOMATIC CONSTRUCTION Laid: Source: October 27, 2016

SWT-2017-00214
GRDA, Proposed Lake Frances Whitewater Park
Illinois River
Adair County, OK
Enclosure 4 of 31



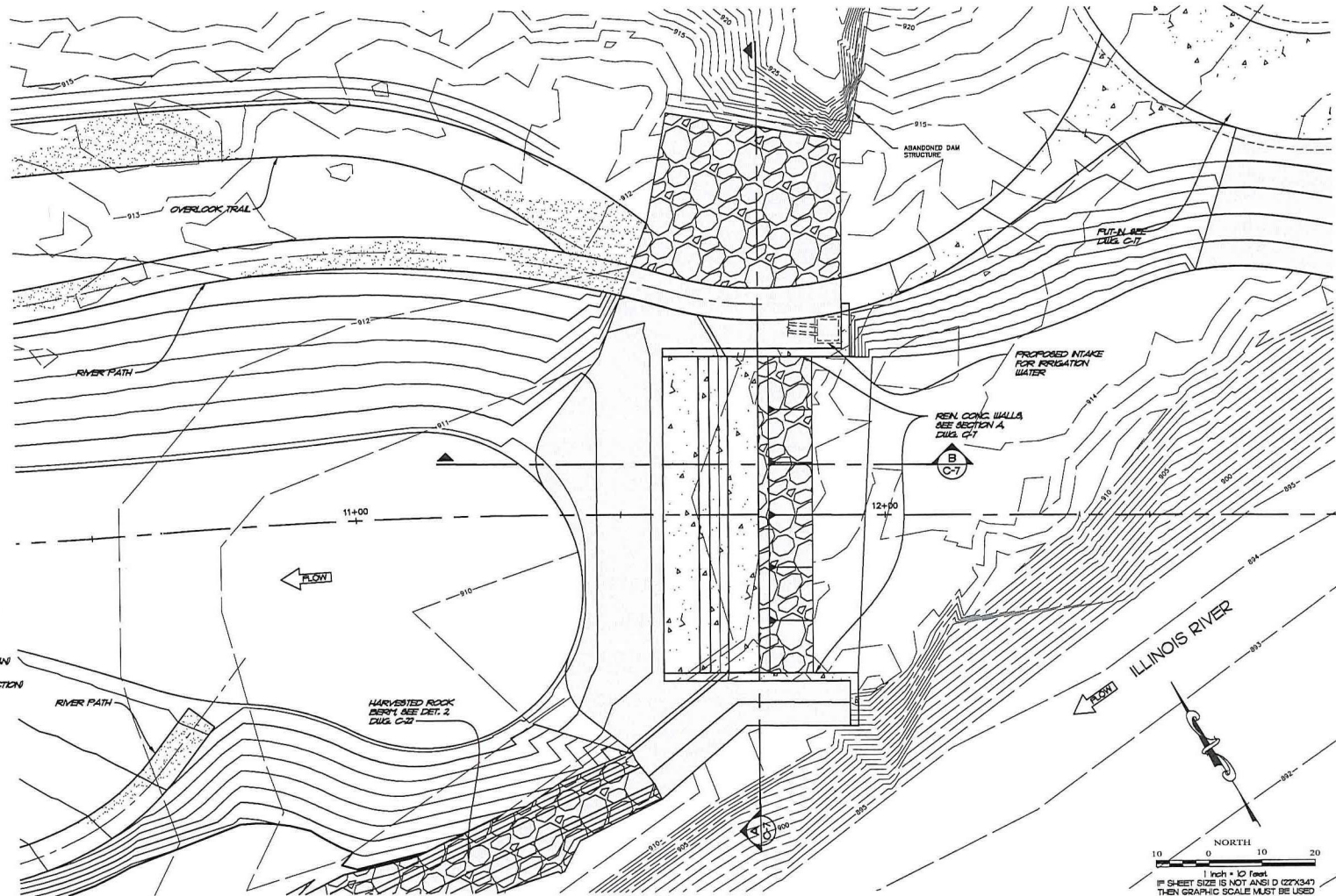
Number	Revision Description	By	Date	THE WALTON FAMILY FOUNDATION	LAKE FRANCES WHITEWATER PARK PRELIMINARY DESIGN	PLAN & PROFILE STA. 3+50 TO STA. 7+00		DESIGN: REM CHECK: MPA DATE: OCTOBER 2015	PROJECT NUMBER 6541893301	Drawing Number: C-4

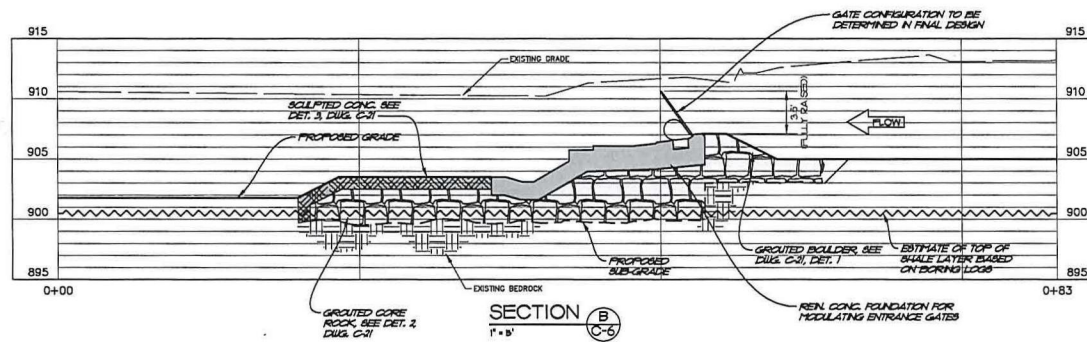
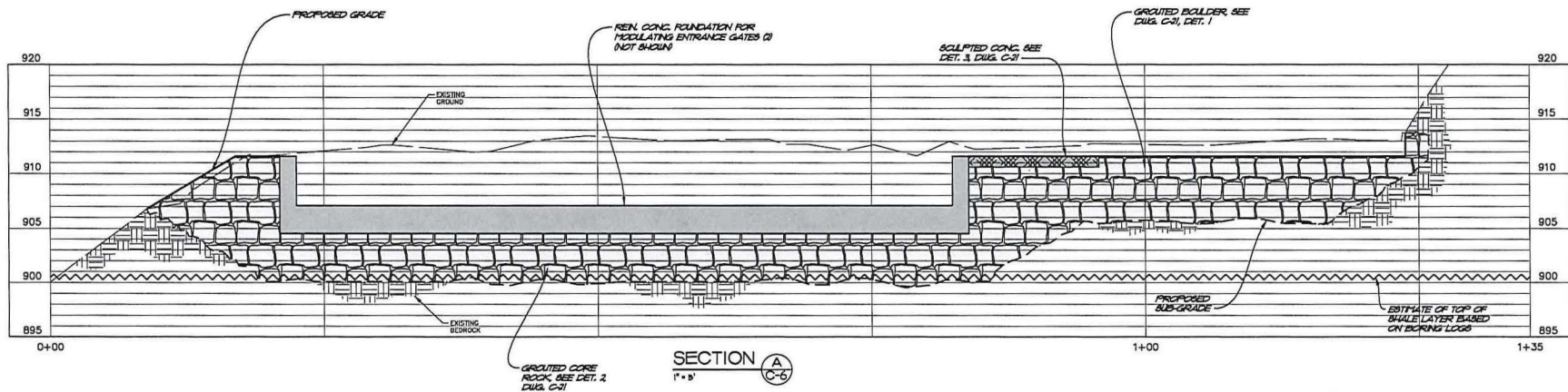
SWT-2017-00214
 GRDA, Proposed Lake Frances Whitewater Park
 Illinois River
 Adair County, OK
 Enclosure 5 of 31



LEGEND

— 950 —	EXISTING CONTOUR MAJOR
— — —	EXISTING CONTOUR MINOR
—	EXISTING TREE
▨	EXISTING BEDROCK
▨	EXISTING SOIL
+	EXISTING WETLANDS
+	EXISTING RIPRAP
— 950 —	PROPOSED CONTOUR MAJOR
— — —	PROPOSED CONTOUR MINOR
—	PROPOSED TOP OR TOE OF BANK
▨	PROPOSED CONCRETE (PLAN)
▨	PROPOSED CONCRETE (SECTION)
▨	PROPOSED GROUTED Boulders (PLAN)
▨	PROPOSED GROUTED Boulders (SECTION)
▨	PROPOSED CHANNEL ARMORING
▨	PROPOSED SCULPTED CONCRETE CAP (PLAN)
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▨	PROPOSED SOIL RIPRAP
▨	PROPOSED SUBSURFACE RIPRAP
▨	PROPOSED NATURAL STONE PATH (PLAN)
▨	PROPOSED RIPRAP OR GROUTED Boulders SLOPE LINE
▨	BOUNDARY OF GROUTED STRUCTURE
▨	ESTIMATE OF TOP OF SHALE LAYER BASED ON BORING LOGS





Know what's below.
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PRELIMINARY
NOT FOR CONSTRUCTION

Number	Revision Description	By	Date

THE WALTON FAMILY
FOUNDATION

LAKE FRANCES WHITEWATER PARK
PRELIMINARY DESIGN

ENTRANCE GATES
SECTIONS

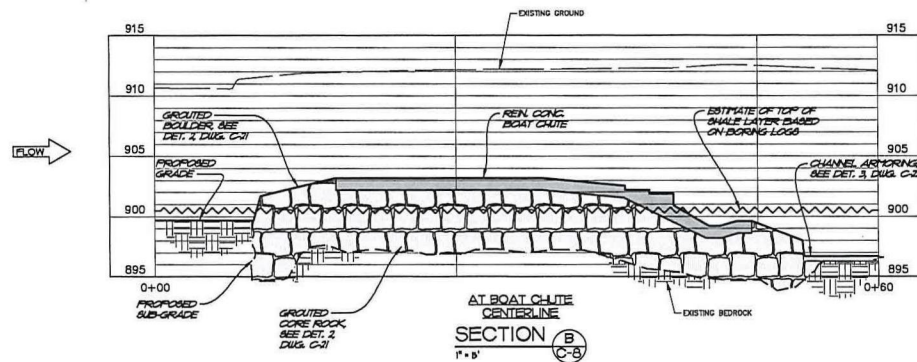
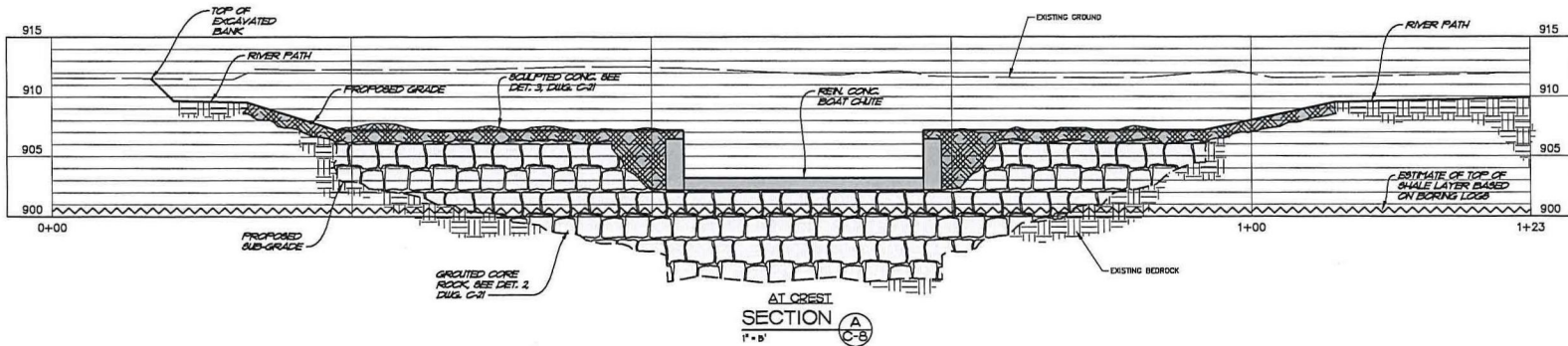
Laughlin Whitewater
7630 Abner Dr.
Dallas, TX 75231
(214) 354-0001
A DIVISION OF INTEREST & COMPANY | FORT WORTH, TX

DESIGN: REM
DETAIL: MPA
CHECK: BAN
DATE: OCTOBER 2016

PROJECT NUMBER
6541893301

Drawing Number:
C-7

SWT-2017-00214
GRDA, Proposed Lake Frances Whitewater Park
Illinois River
Adair County, OK
Enclosure 8 of 31

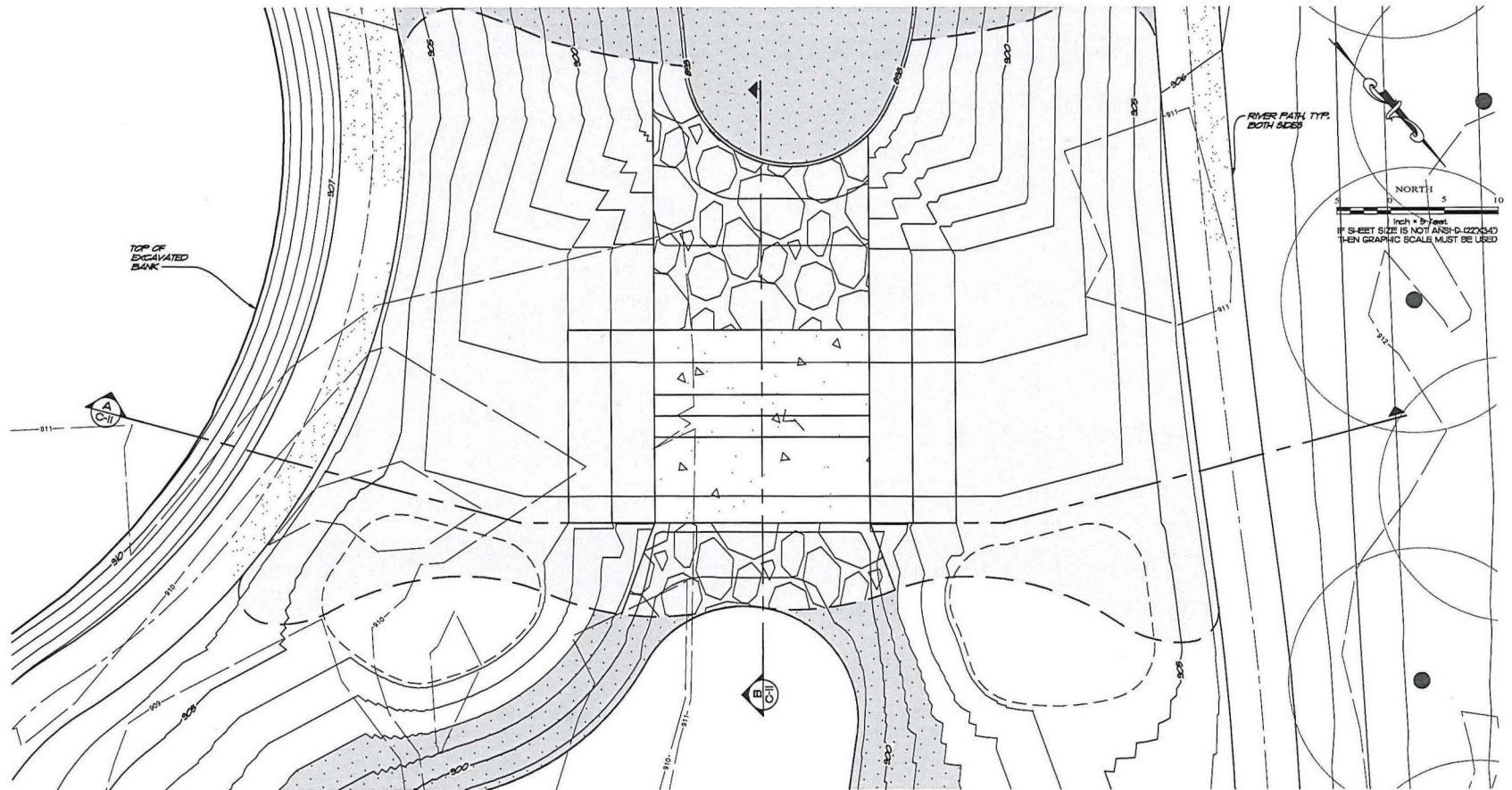


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PRELIMINARY
NOT FOR CONSTRUCTION

Number	Revision Description	By	Date	THE WALTON FAMILY FOUNDATION	LAKE FRANCES WHITEWATER PARK PRELIMINARY DESIGN	TYPICAL FEATURE - WAVE SECTIONS	DESIGN: REM DETAIL: MPA CHECK: BAN DATE: OCTOBER 2016	PROJECT NUMBER 6541593301	Drawing Number: C-9

SWT-2017-00214
GRDA, Proposed Lake Frances Whitewater Park
Illinois River
Adair County, OK
Enclosure 10 of 31



LEGEND

- 950 — EXISTING CONTOUR MAJOR
- — — EXISTING CONTOUR MINOR
- — — EXISTING TREE
- — — EXISTING BEDROCK
- — — EXISTING SOIL
- — — EXISTING WETLANDS
- — — EXISTING RIPRAP
- 950 — PROPOSED CONTOUR MAJOR

- — — PROPOSED CONTOUR MINOR
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- — — PROPOSED CHANNEL ARMORING
- — — PROPOSED SCULPTED CONCRETE CAP (PLAN)

PLAN

- — — PROPOSED SCULPTED CONCRETE CAP (SECTION)
- — — PROPOSED SOIL RIPRAP
- — — PROPOSED SUBSURFACE RIPRAP
- — — PROPOSED NATURAL STONE PATH (PLAN)
- — — PROPOSED RIPRAP OR GROUTED BOULDER SLOPE LINE
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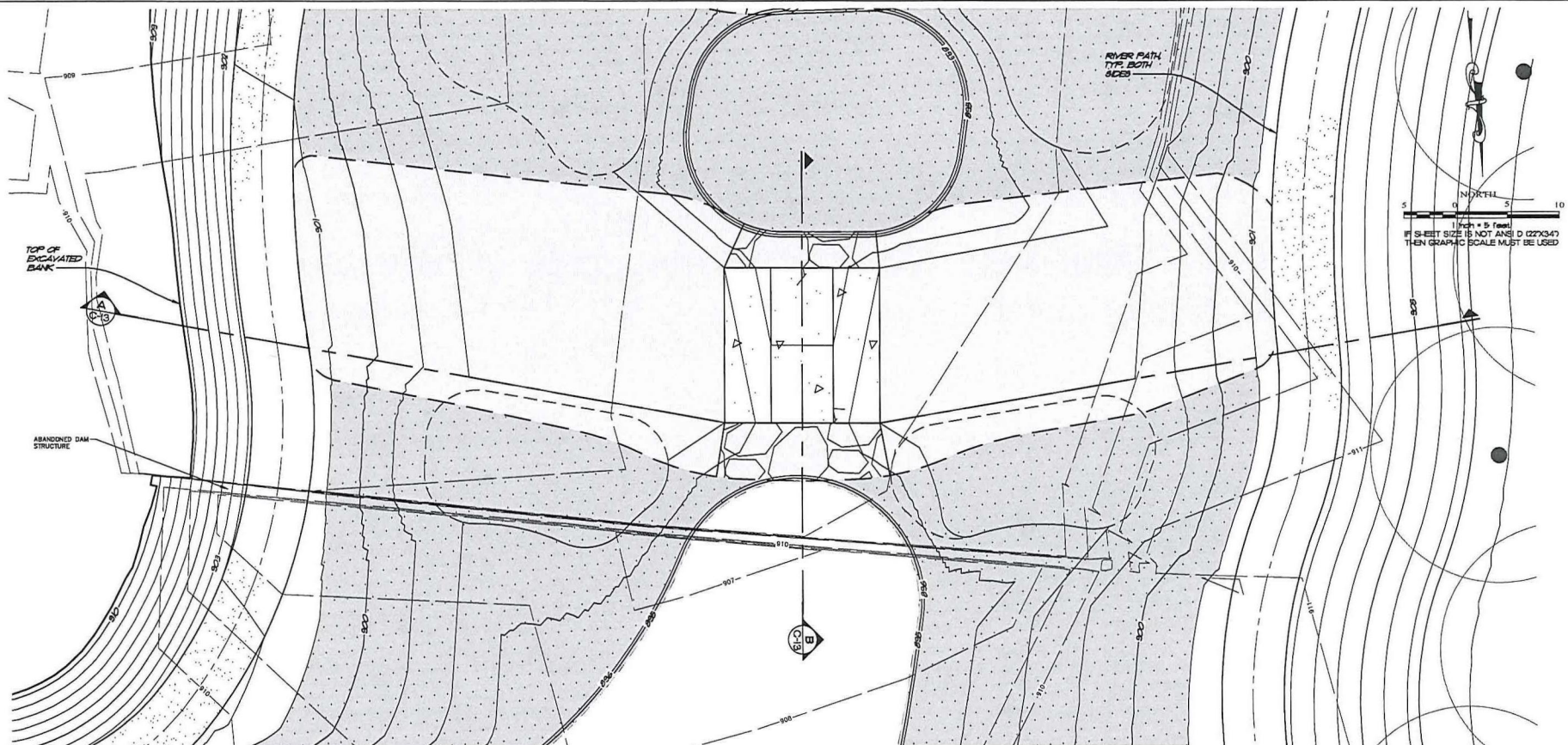


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PRELIMINARY
NOT FOR CONSTRUCTION

Number	Revision Description	By	Date	THE WALTON FAMILY FOUNDATION	LAKE FRANCES WHITEWATER PARK PRELIMINARY DESIGN	TYPICAL FEATURE - HIGH PERFORMANCE PLAN	Laughlin Whitewater	DESIGN: REM DETAIL: MPA CHECK: BAN DATE: OCTOBER 2016	PROJECT NUMBER 6541893301	Drawing Number: C-10

SWT-2017-00214
GRDA, Proposed Lake Frances Whitewater Park
Illinois River
Adair County, OK
Enclosure 11 of 31



LEGEND

- 900 — EXISTING CONTOUR MAJOR
- — — EXISTING CONTOUR MINOR
- — — EXISTING TREE
- — — EXISTING BEDROCK
- — — EXISTING SOIL
- — — EXISTING WETLANDS
- — — EXISTING RIPRAP
- 850 — PROPOSED CONTOUR MAJOR
- — — PROPOSED CONTOUR MINOR

- — — PROPOSED TOP OR TICE OF BANK
- — — PROPOSED CONCRETE (PLAN)
- — — PROPOSED CONCRETE (SECTION)
- — — PROPOSED GROUTED BOULDERS (PLAN)
- — — PROPOSED GROUTED BOULDERS (SECTION)
- — — PROPOSED CHANNEL ARMORING
- — — PROPOSED SCULPTED CONCRETE CAP (PLAN)
- — — PROPOSED SCULPTED CONCRETE CAP (SECTION)
- — — PROPOSED SOIL RIPRAP

- — — PROPOSED SUBSURFACE RIPRAP
- — — PROPOSED NATURAL STONE PATH (PLAN)
- — — PROPOSED RIPRAP OR GROUTED BOULDER SLOPE LINE
- — — BOUNDARY OF GROUTED STRUCTURE
- — — ESTIMATE OF TOP OF SHALE LAYER BASED ON BORING LOGS

PLAN
P-8

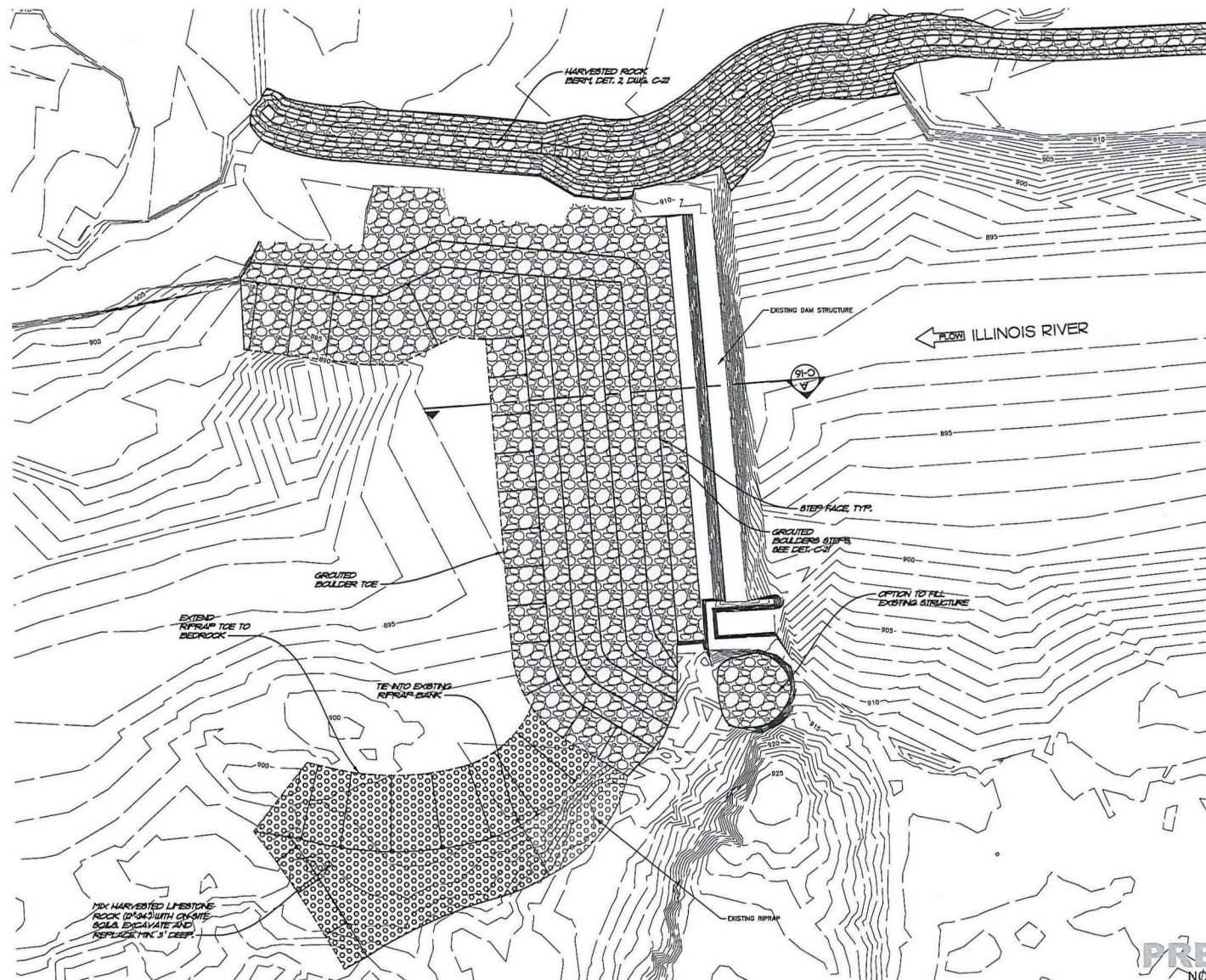


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Number	Revision Description	By	Date	THE WALTON FAMILY FOUNDATION	LAKE FRANCES WHITEWATER PARK PRELIMINARY DESIGN	TYPICAL FEATURE - TUBING PLAN	Laughlin Whitewater PARKS & RECREATION A DIVISION OF TERRACON & COMPANY	DESIGN: REM DETAIL: MPA CHECK: SAN DATE: OCTOBER 2016	PROJECT NUMBER 0541893301	Drawing Number: C-12

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GRDA, Proposed Lake Frances Whitewater Park
Illinois River
Adair County, OK
Enclosure 13 of 31



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Number	Revision Description	By	Date

THE WALTON FAMILY
FOUNDATION

LAKE FRANCES WHITEWATER PARK
PRELIMINARY DESIGN

DAM HAZARD MITIGATION
PLAN

Laughlin Whitewater
1420 Main St.
Glenwood, CO 80531
760.934.2000
A DIVISION OF RESEARCH & COMPANY
F00000000000

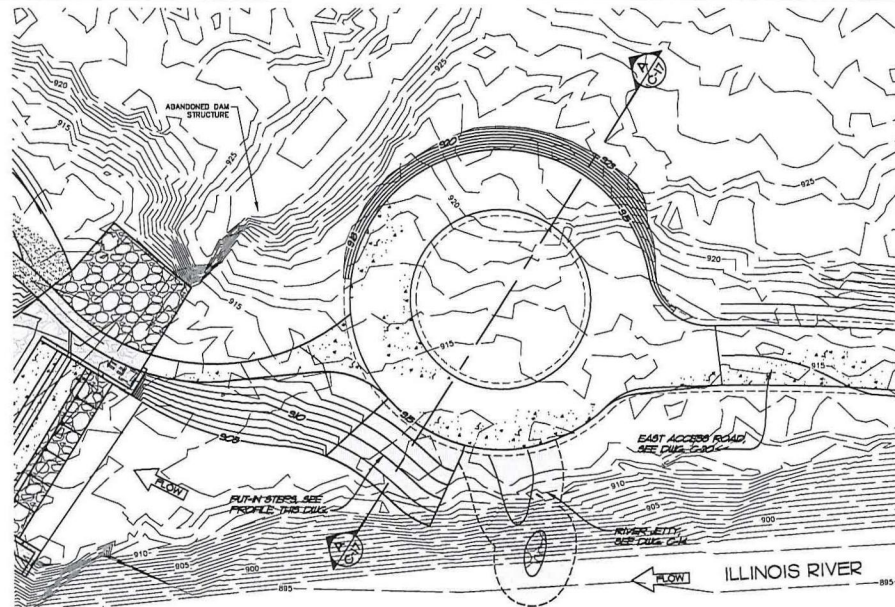
DESIGN: REM, BAN
DETAIL: MPA
CHECK: BAN
DATE: OCTOBER 2016

PROJECT NUMBER
6541893301

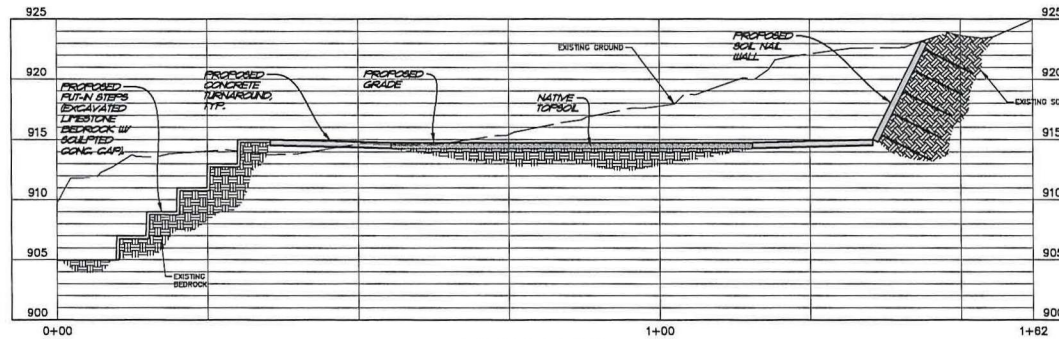
Drawing Number:
C-15

NOT FOR CONSTRUCTION. ANY REVISIONS TO THIS PLAN MUST BE APPROVED BY THE DESIGNER. ANY REVISIONS TO THIS PLAN MUST BE APPROVED BY THE DESIGNER.

SWT-2017-00214
GRDA, Proposed Lake Frances Whitewater Park
Illinois River
Adair County, OK
Enclosure 16 of 31



PLAN
1" = 20'



TYPICAL WALL SECTION
AT TURNAROUND

SECTION A
HORIZ. 1" = 10'
VERT. 1" = 5'

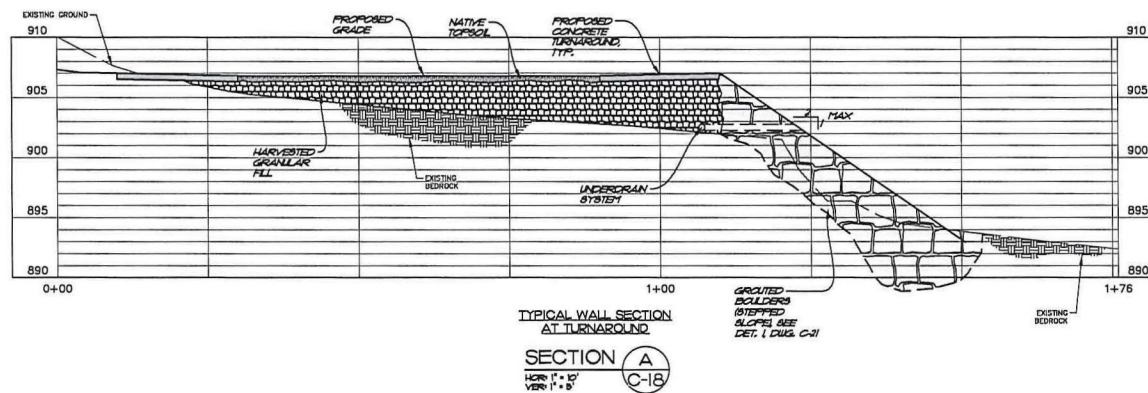
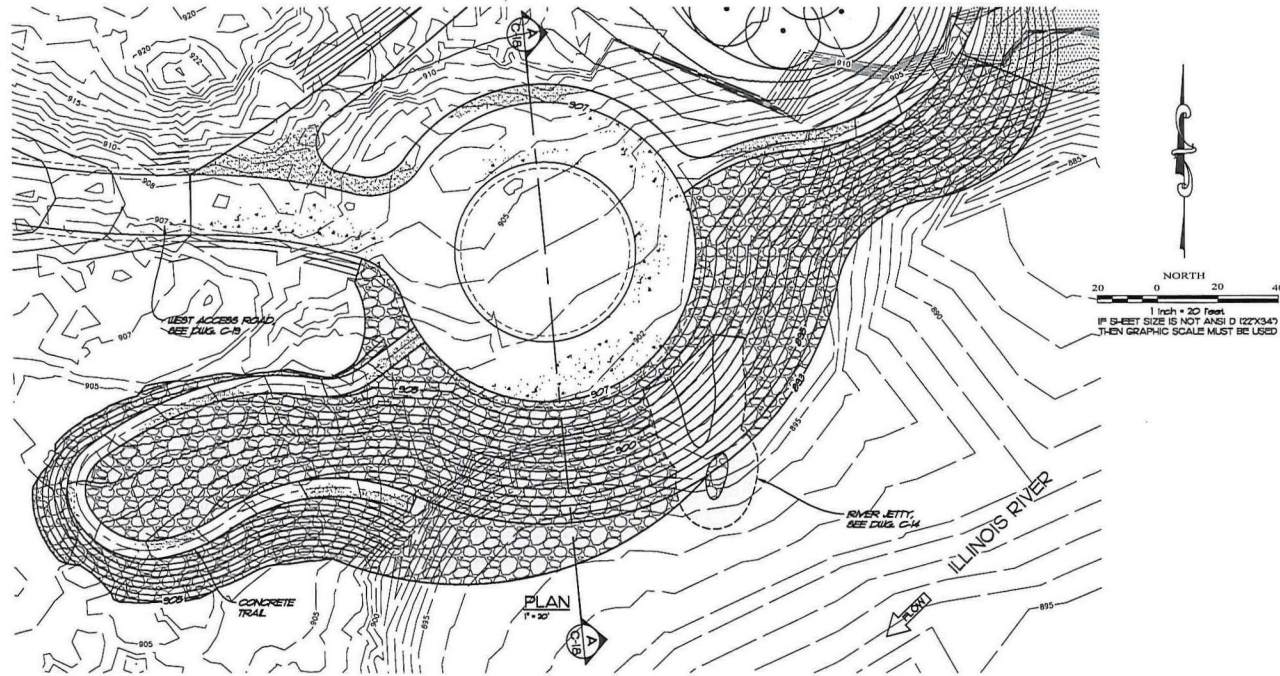


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PRELIMINARY
NOT FOR CONSTRUCTION

Number	Revision Description	By	Date	THE WALTON FAMILY FOUNDATION	LAKE FRANCES WHITEWATER PARK PRELIMINARY DESIGN	PUT-IN PLAN & SECTION	Laughlin Whitewater ARCHITECTS A DIVISION OF METCALF & COMPANY, P.C.	DESIGN: REM DETAIL: MPA CHECK: BAN DATE: OCTOBER 2016	PROJECT NUMBER 6541893301	Drawing Number: C-17

SWT-2017-00214
GRDA, Proposed Lake Frances Whitewater Park
Illinois River
Adair County, OK
Enclosure 18 of 31



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Number	Revision Description	By	Date

THE WALTON FAMILY
FOUNDATION

LAKE FRANCES WHITEWATER PARK
PRELIMINARY DESIGN

TAKE-OUT
PLAN & SECTION

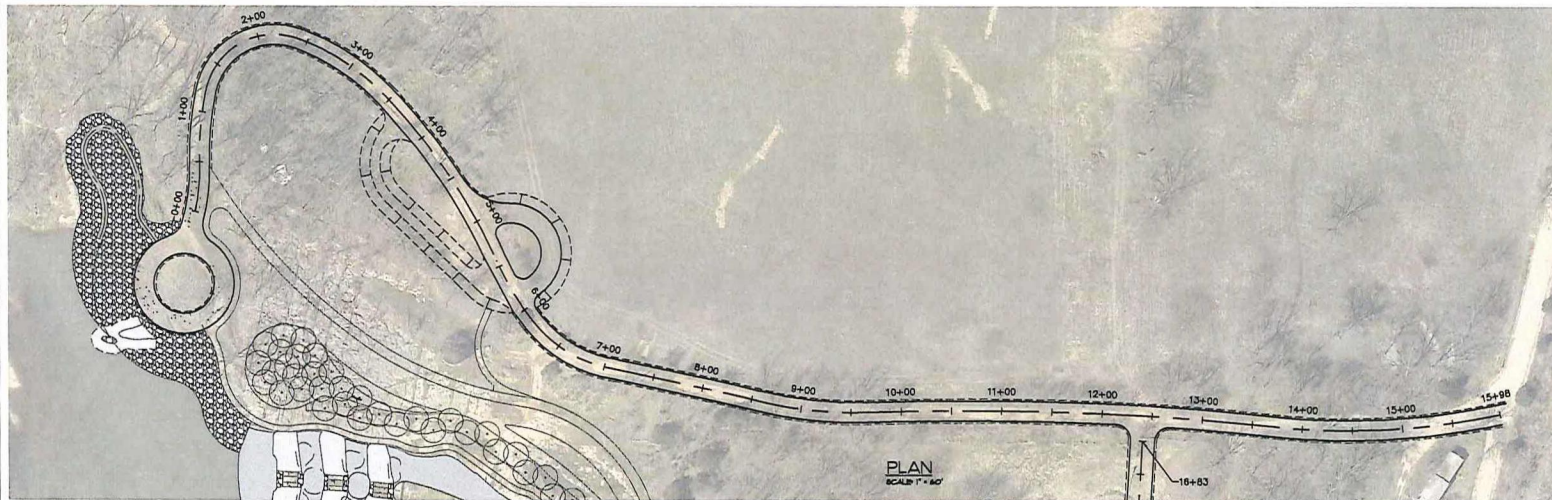
Laughlin Whitewater
DESIGN & CONSTRUCTION
A DIVISION OF HERRICK & COMPANY

DESIGN: REM
DETAIL: MPA
CHECK: BAN
DATE: OCTOBER 2015
PROJECT NUMBER: 6541893301

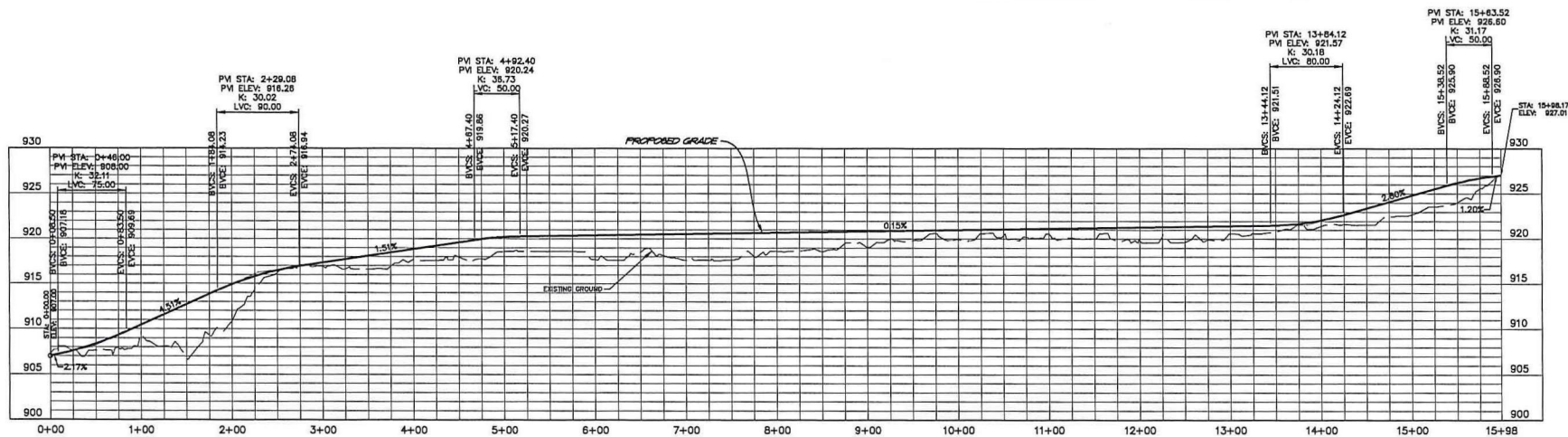
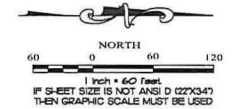
Drawing Number:
C-18

PRELIMINARY
NOT FOR CONSTRUCTION

SWT-2017-00214
GRDA, Proposed Lake Frances Whitewater Park
Illinois River
Adair County, OK
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NOTE:
10 WESTERN ROW OF TREES ALONG
EXISTING ROAD ALIGNMENT TO BE
REMOVED AS REQUIRED.
(1) SEE DET. 4, DWG. C-21 FOR TYP.
ACCESS ROAD SECTION.



PROFILE
SCALE 1" = 4'



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PRELIMINARY
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Number	Revision Description	By	Date

THE WALTON FAMILY
FOUNDATION

LAKE FRANCES WHITEWATER PARK
PRELIMINARY DESIGN

WEST ACCESS ROAD
PLAN & PROFILE

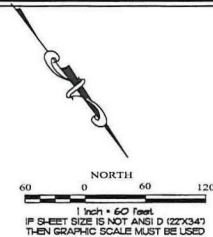
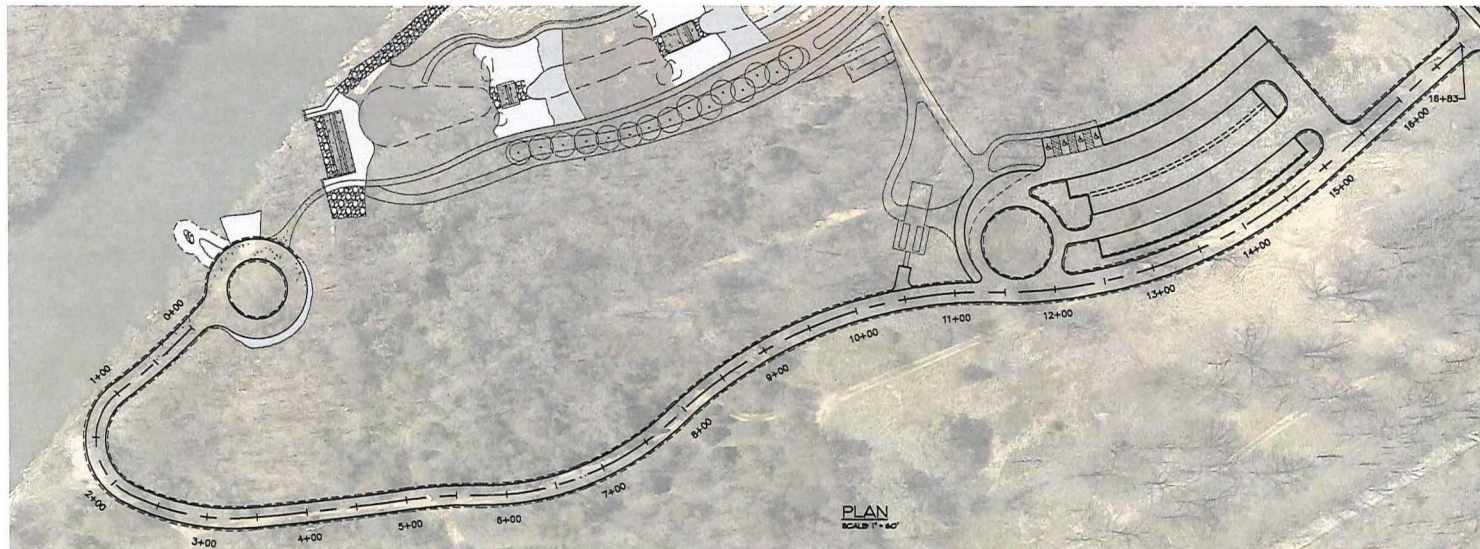
Laughlin Whitewater
ENGINEERS & ARCHITECTS
A DIVISION OF SERVICE & COMPANY

DESIGN: MPA
DETAIL: MPA
CHECK: BAN
DATE: OCTOBER 2016

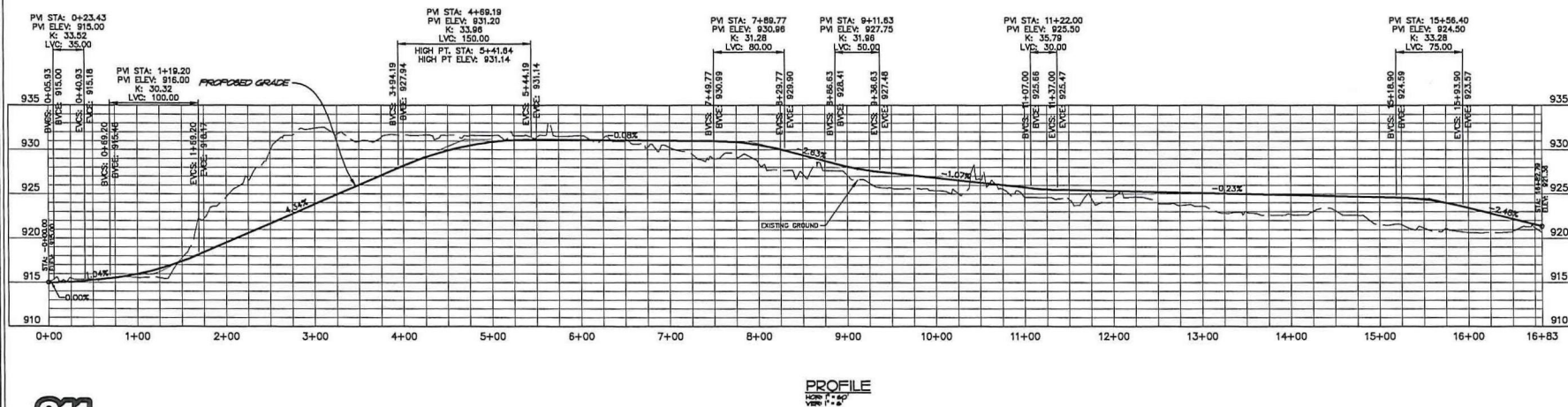
PROJECT NUMBER
6541893301

Drawing Number:
C-19

SWT-2017-00214
GRDA, Proposed Lake Frances Whitewater Park
Illinois River
Adair County, OK
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NOTE:
 (1) WESTERN ROW OF TREES
 ALONG EXISTING ROAD
 ALIGNMENT TO BE
 REMOVED AS REQUIRED.
 (2) SEE DET. 4, DWG. C-20
 FOR TYP. ACCESS ROAD
 SECTION.



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PRELIMINARY
NOT FOR CONSTRUCTION

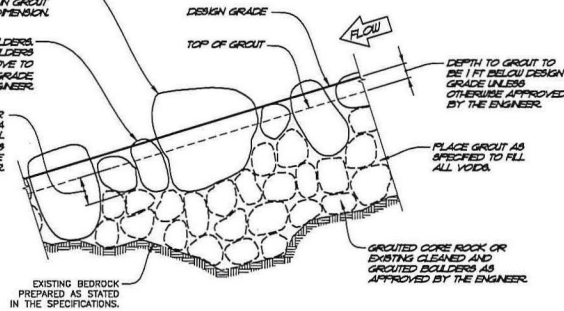
Number	Revision Description	By	Date	THE WALTON FAMILY FOUNDATION	LAKE FRANCES WHITEWATER PARK PRELIMINARY DESIGN	EAST ACCESS ROAD PLAN & PROFILE	 TARI ALLEN D. LAKESIDE, OK DESIGN: MPA CHECK: MPA DATE: OCTOBER 2018	PROJECT NUMBER 6541893301	Drawing Number: C-20

SWT-2017-00214
 GRDA, Proposed Lake Frances Whitewater Park
 Illinois River
 Adair County, OK
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WHERE APPROVED BY THE ENGINEER, FEATURE Boulders MAY PROTRUDE ABOVE DESIGN GRADES. EACH FEATURE Boulder MUST BE EMBEDDED IN GROUT A MINIMUM OF 1/2 ITS VERTICAL DIMENSION.

SURFACE Boulders TOP OF SURFACE Boulders SHALL BE WITHIN 8" ABOVE TO 4" BELOW DESIGN GRADE UNLESS DIRECTED BY ENGINEER.

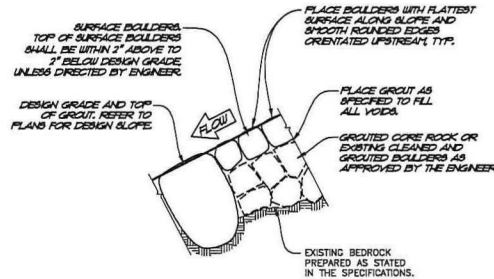
EACH SURFACE Boulder EMBEDDED INTO GROUT A MINIMUM OF HALF OF ITS VERTICAL DIMENSION OR 12" WHICHEVER IS GREATER, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.



GROUTED BOULDER PLACEMENT
RECESSED GROUT

DETAIL 1
1" = 4"

NOTE: DRY-SHAKE COLOR HARDENER SHALL BE APPLIED TO ALL GROUT SURFACES. REFER TO SPEC. SECTION C000 FOR PERCENT COVERAGE REQUIREMENTS.

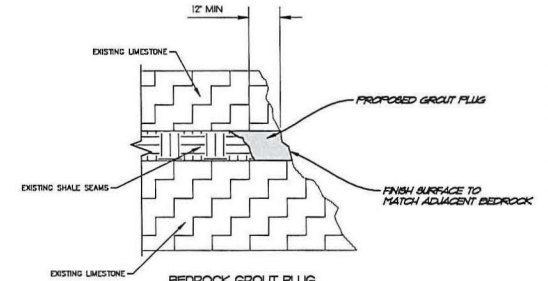


GROUTED BOULDER PLACEMENT
FULL DEPTH GROUT

DETAIL 2
1" = 4"

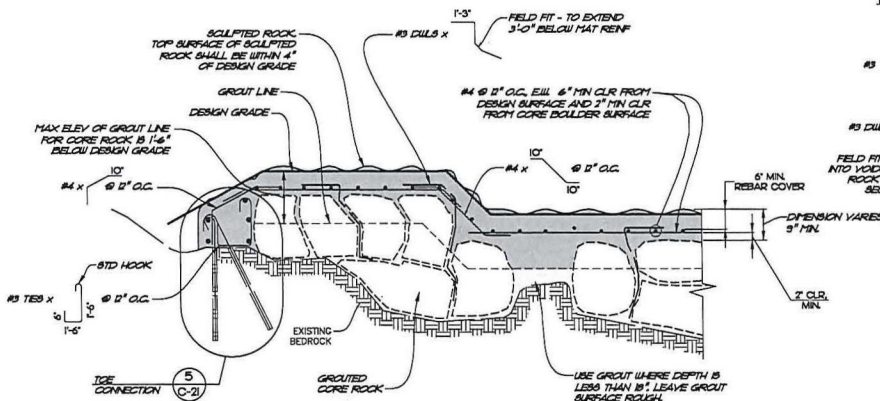
GROUTED BOULDER NOTES:

1. UNLESS OTHERWISE INDICATED, ALL SURFACE Boulders TO BE INDIVIDUALLY PLACED AS DIRECTED BY THE ENGINEER.
2. BEFORE GROUTING, CLEAN ALL DIRT AND MATERIALS FROM ROCK THAT COULD PREVENT THE GROUT FROM BONDING.
3. PLACE GROUT BY INJECTION METHODS AND VIBRATE TO FILL VOIDS TO THE SPECIFIED GROUT DEPTH. CLEAN EXCESS GROUT FROM ALL EXPOSED SURFACES.
4. BOULDER PLACEMENT SHALL BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO GROUT PLACEMENT.
5. EXPOSED GROUT SHALL BE TROWELED AND FINISHED TO MINIMIZE VISIBILITY; WASH AND CLEAN ALL NON-GROUTED SURFACES.
6. THE CONTRACTOR SHALL CONTROL GROUT MIX AND PLACEMENT PROCEDURES TO ACHIEVE THE SPECIFIED THICKNESS AND GRADE OF THE GROUT LAYER.
7. MAXIMUM BOULDER HEIGHT CAN BE EXCEEDED ON A CASE BY CASE BASIS UPON APPROVAL BY ENGINEER.
8. CONTRACTOR WILL BE REQUIRED TO USE MULTIPLE BOULDER LAYER GROUT WHEN GROUTING MORE THAN TWO BOULDER LAYERS IN ONE PLACEMENT.
9. ROCK AND SUBGRADE MUST BE BLANKETED AND HEATED IF COLD WEATHER CONCRETE PLACEMENT CONDITIONS EXIST. REFER TO SECTION C000 OF SPECIFICATIONS.
10. SURFACE Boulders AND CORE ROCK SHALL BE TIGHTLY PLACED SO THAT THE VOID RATIO AND VOLUME OF GROUT IS LESS THAN 35% OF THE TOTAL VOLUME BELOW THE GROUT LINE OF THE ENTIRE GROUTED BOULDER MASS.



BEDROCK GROUT PLUG

DETAIL 6
12" MIN

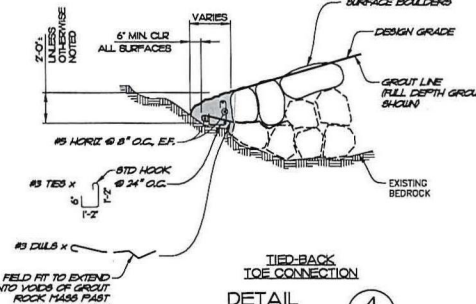


SCLIPPED ROCK
CONNECTION

DETAIL 3
1" = 4"

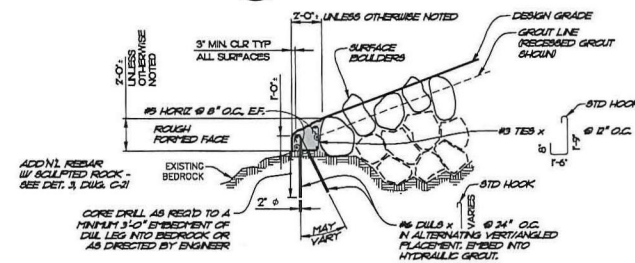
DETAIL NOTE: DILL PLACEMENT MAY BEND TO ALIGN WITH VOIDS @ 30" MAX EA. DIRECTION PRIOR TO GROUTING. TOP BENT LEG SHALL BE 6" CLR BELOW DESIGN SURFACE.

REBAR NOTE: HOOKS AND BENDS OF BENT REBAR SHALL ALWAYS BE ORIENTED TOWARDS DOWNSIDE.



TIED-BACK
TOE CONNECTION

DETAIL 4
1" = 4"



BEDROCK-ANCHORED
TOE CONNECTION

DETAIL 5
1" = 4"

NOTE: HOOKS SHALL ALWAYS BE ORIENTED TOWARDS DOWNSIDE.

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Number	Revision Description	By	Date

THE WALTON FAMILY
FOUNDATION

LAKE FRANCES WHITEWATER PARK
PRELIMINARY DESIGN

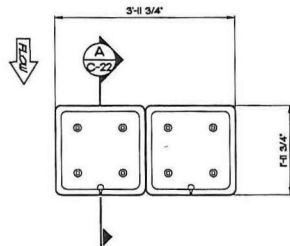
TYPICAL ROCK DETAILS

Loughlin Willowwater
DESIGN: REM
DETAIL: MPA
CHECK: BAN
DATE: OCTOBER 2016

PROJECT NUMBER
6541893301

Drawing Number:
C-21

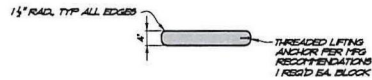
SWT-2017-00214
GRDA, Proposed Lake Frances Whitewater Park
Illinois River
Adair County, OK
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NOTE: ALL HOLE & BLOCK DIMENSIONS AND ANCHOR PLACEMENT SHALL BE PRECISE ENOUGH TO ALLOW MULTIPLE BLOCKS UP TO 8 BLOCKS HIGH TO BE STACKED AND BOLTED THROUGH TO DROP ANCHORS.

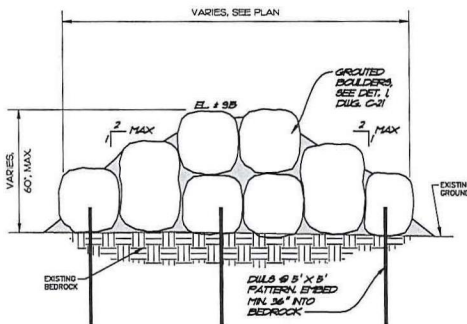
TUNING BLOCK - PLAN

DETAIL 5
3/4\" x 1'-0\"



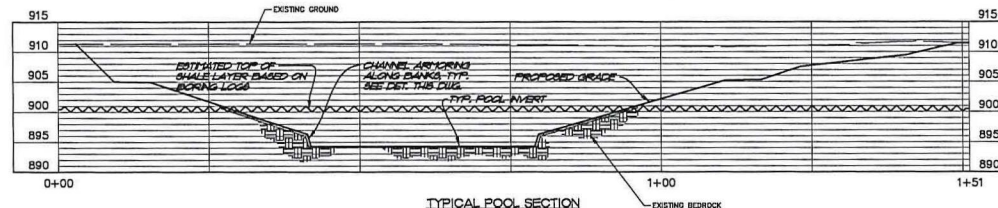
TUNING BLOCK PARALLEL TO FLOW

SECTION A
3/4\" x 1'-0\"



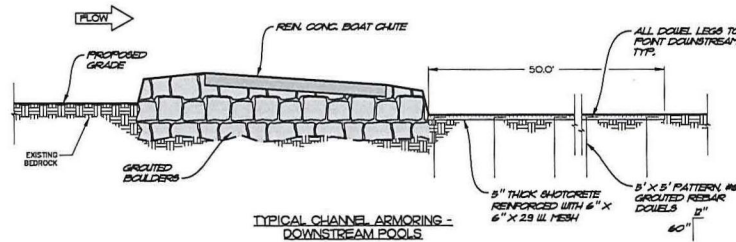
TYPICAL HARVESTED ROCK BERM - SECTION

DETAIL 2
1\" x 2\"

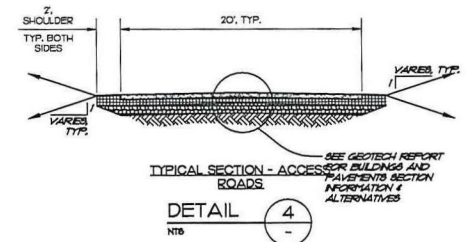


TYPICAL POOL SECTION

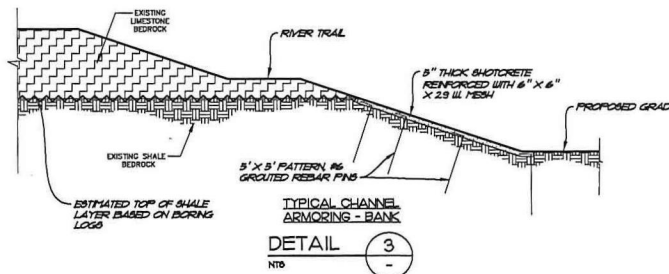
DETAIL 1
1\" x 10\"



TYPICAL CHANNEL ARMORING - DOWNSTREAM POOLS



DETAIL 4
NTB



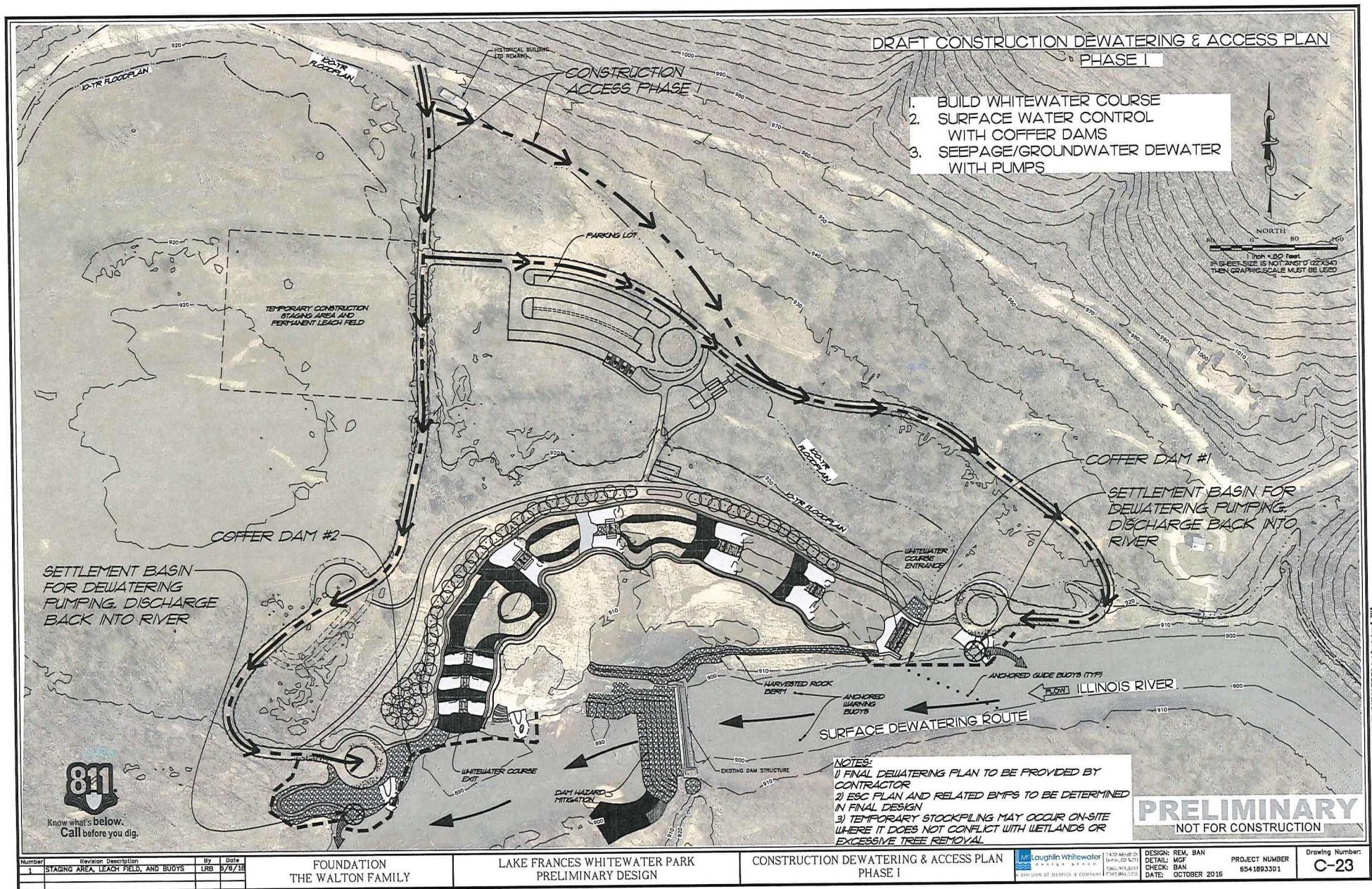
DETAIL 3
NTB

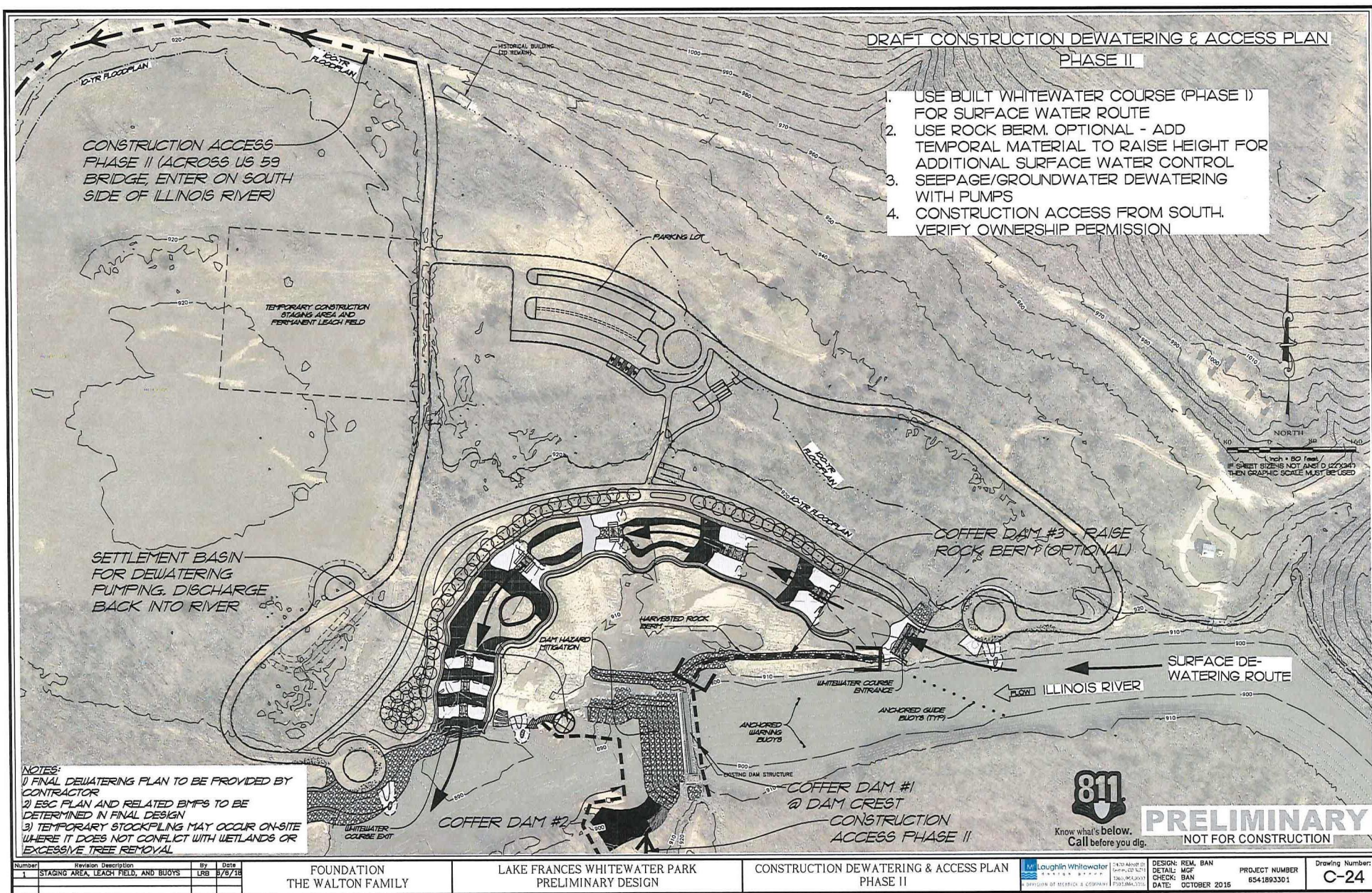


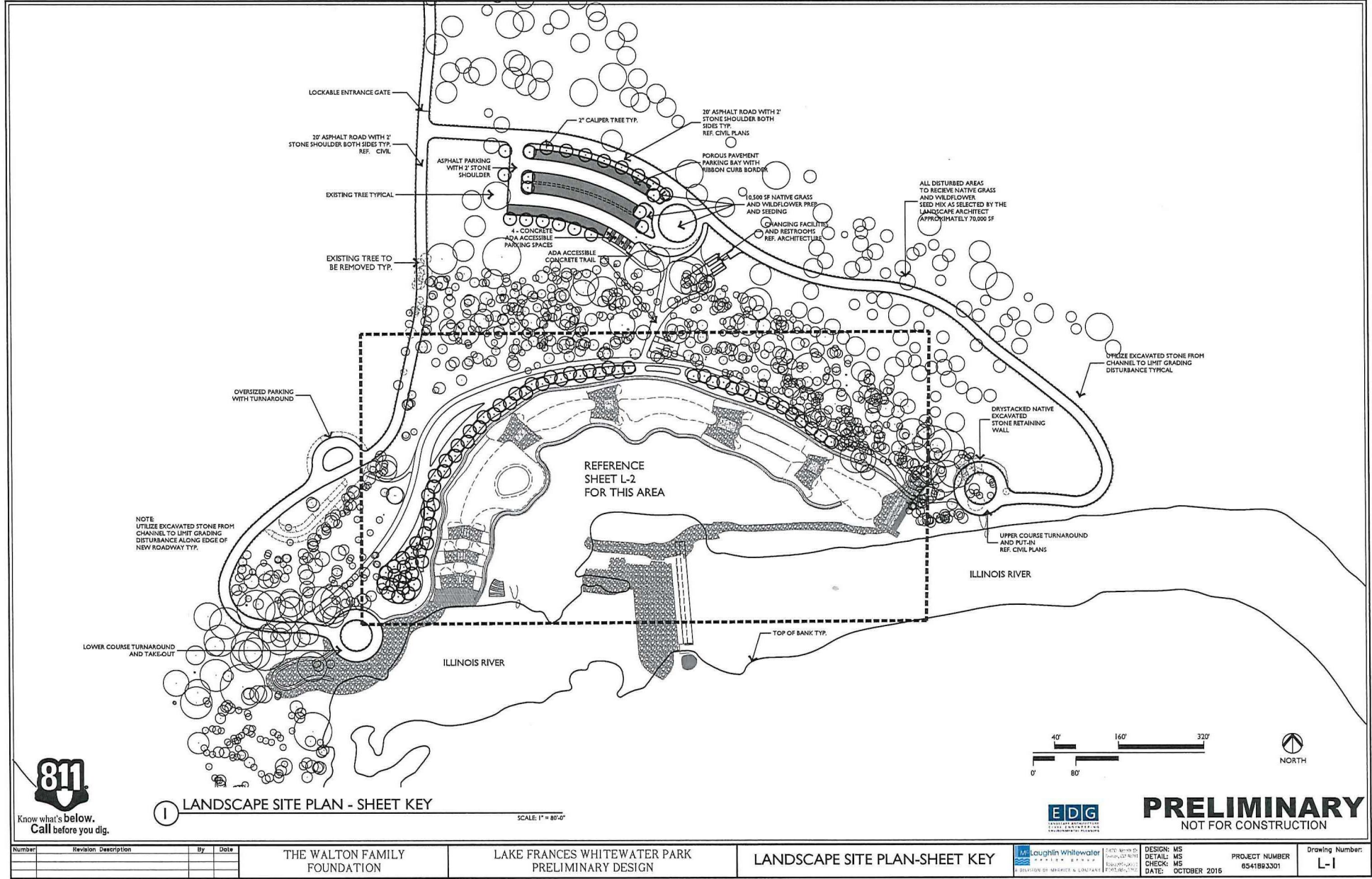
Know what's below.
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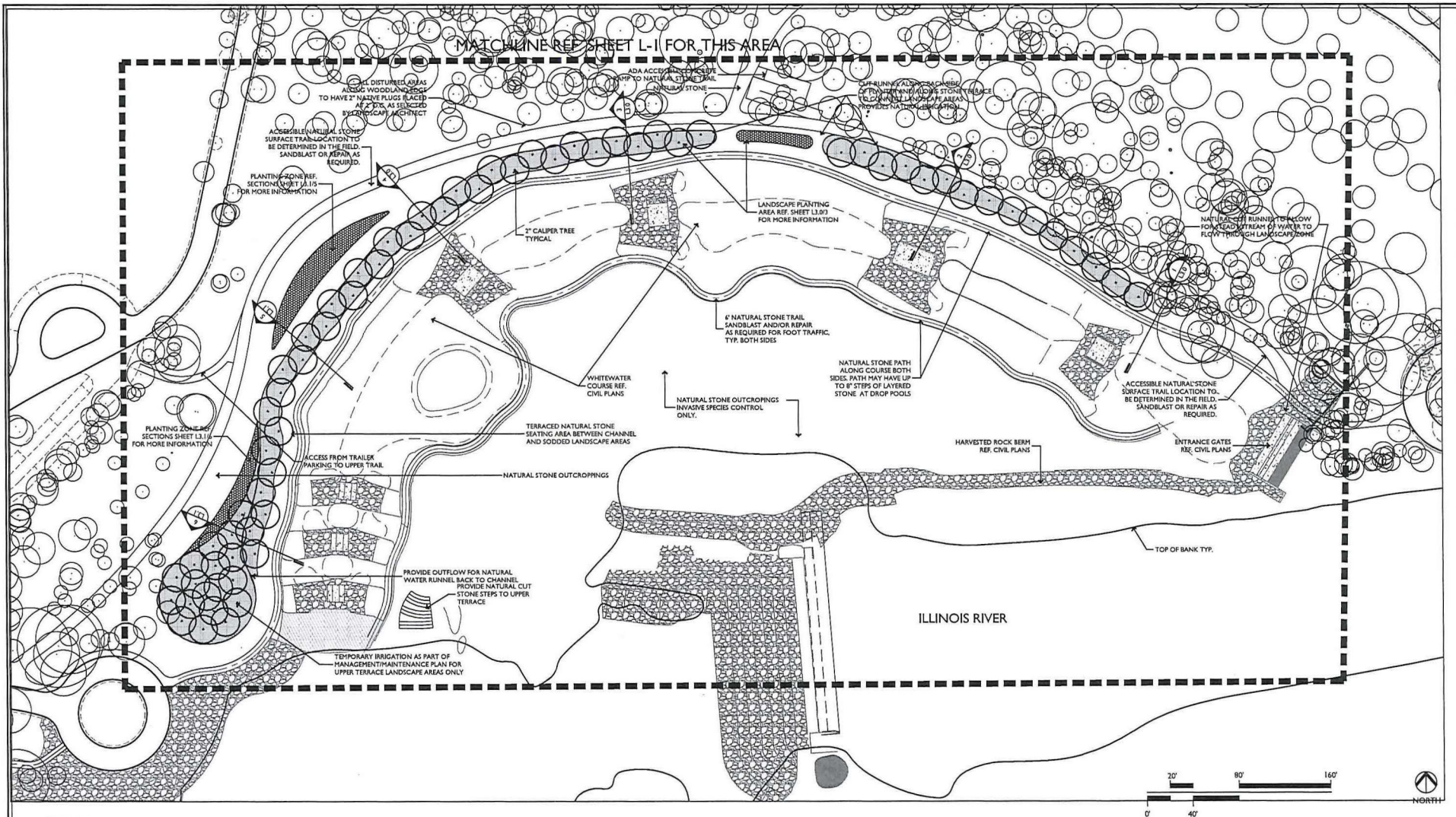
Number	Revision Description	By	Date	THE WALTON FAMILY FOUNDATION	LAKE FRANCES WHITEWATER PARK PRELIMINARY DESIGN	MISC. DETAILS	Laughlin Whitewater	DESIGN: REM DETAIL: MPA CHECK: BAN DATE: OCTOBER 2016	PROJECT NUMBER 6541893301	Drawing Number: C-22

SWT-2017-00214
GRDA, Proposed Lake Frances Whitewater Park
Illinois River
Adair County, OK
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1 LANDSCAPE PLAN

SCALE: 1" = 40'-0"



PRELIMINARY
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Number	Revision Description	By	Date

THE WALTON FAMILY
FOUNDATION

LAKE FRANCES WHITEWATER PARK
PRELIMINARY DESIGN

LANDSCAPE PLAN

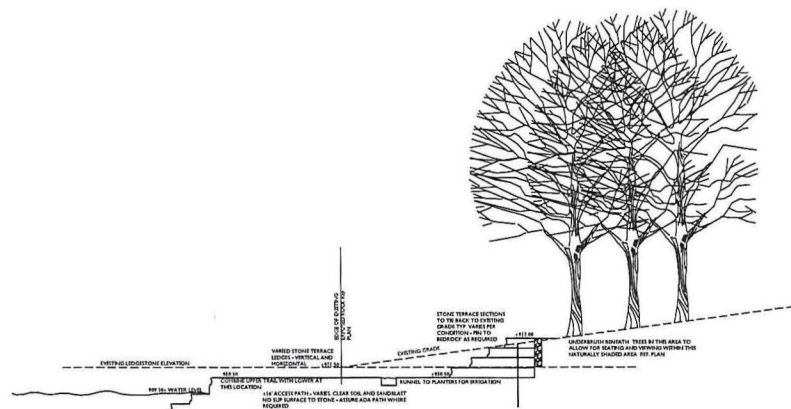


DESIGN: MS
DETAIL: MS
CHECK: MS
DATE: OCTOBER 2016

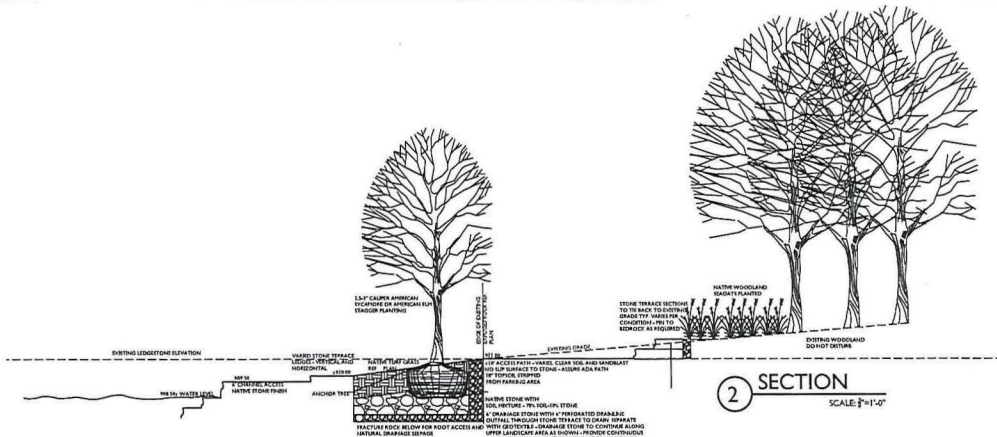
PROJECT NUMBER
6541893301

Drawing Number:
L-2

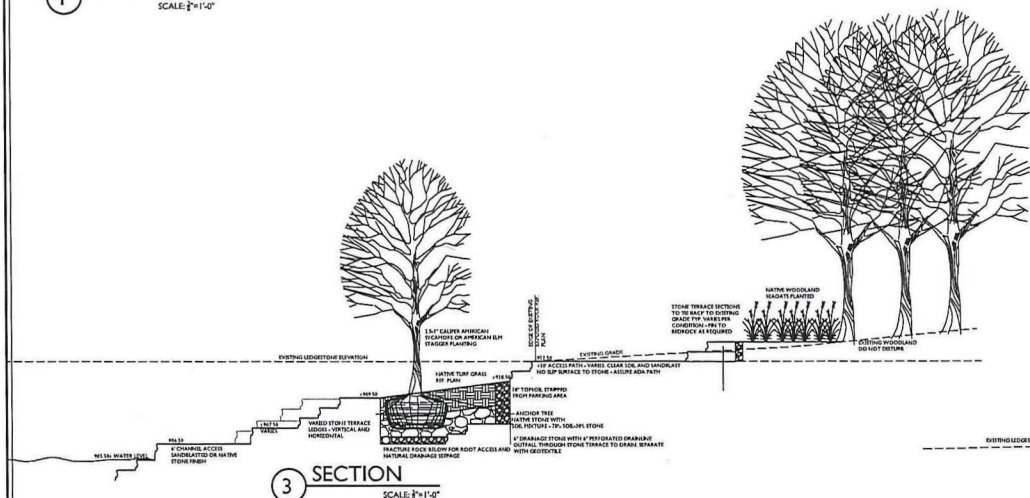
SWT-2017-00214
GRDA, Proposed Lake Frances Whitewater Park
Illinois River
Adair County, OK
Enclosure 27 of 31



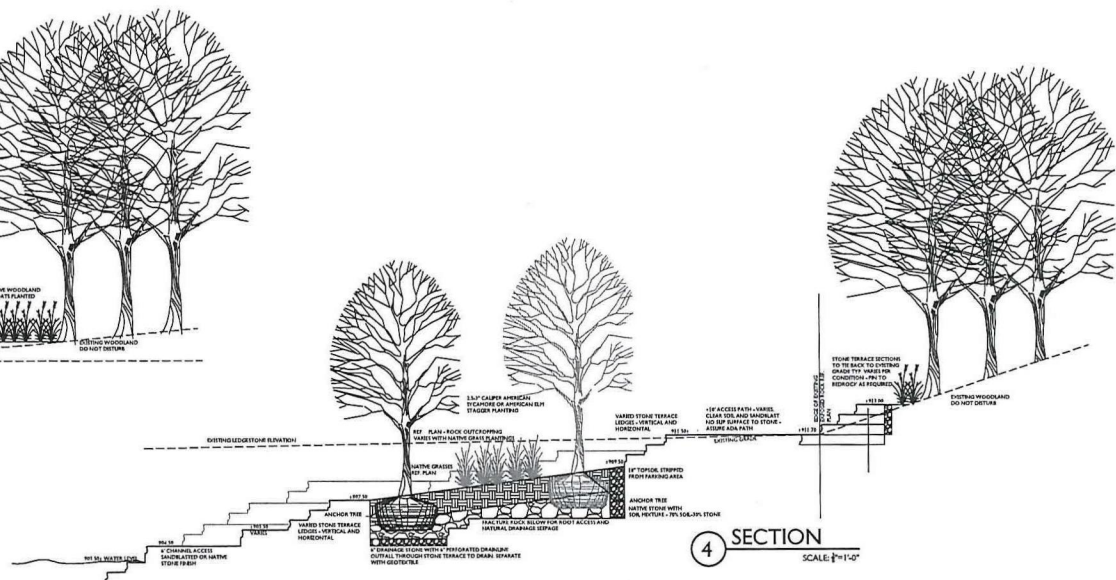
1 SECTION
SCALE: 1"=1'-0"



2 SECTION
SCALE: 1"=1'-0"



3 SECTION
SCALE: 1"=1'-0"



4 SECTION
SCALE: 1"=1'-0"



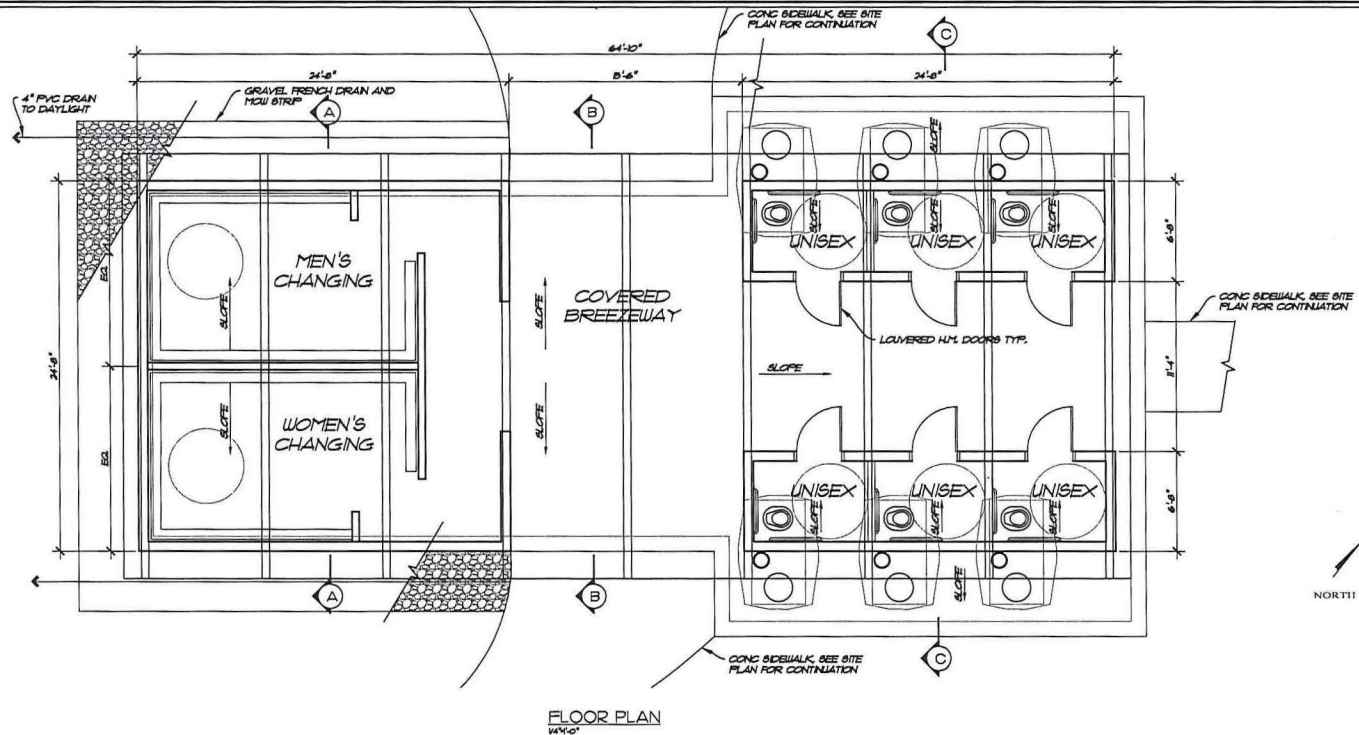
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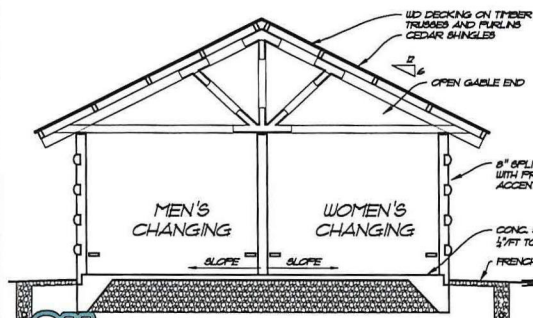
PRELIMINARY
NOT FOR CONSTRUCTION

Number	Revision Description	By	Date	THE WALTON FAMILY FOUNDATION	LAKE FRANCES WHITEWATER PARK PRELIMINARY DESIGN	LANDSCAPE-SITework DETAILS	DESIGN: MS DETAIL: MS CHECK: MS DATE: OCTOBER 2016	PROJECT NUMBER 6541893301	Drawing Number: L-3.0

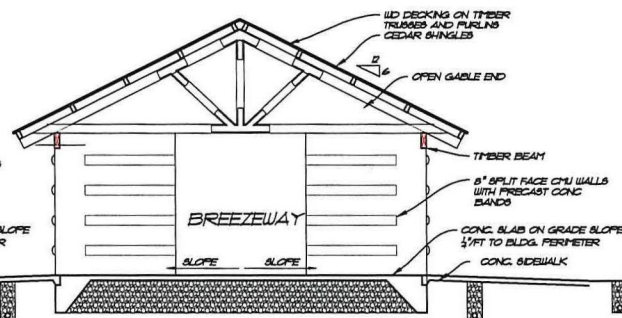
SWT-2017-00214
GRDA, Proposed Lake Frances Whitewater Park
Illinois River
Adair County, OK
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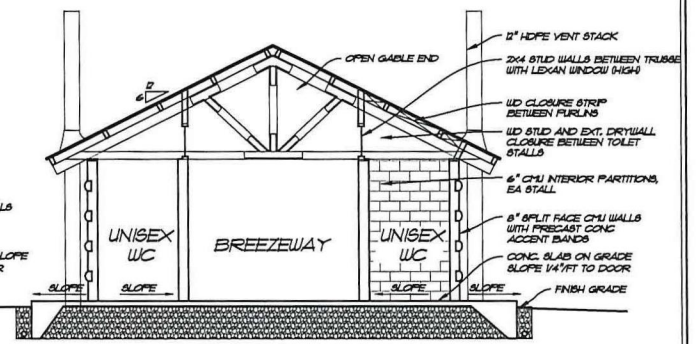
FLOOR PLAN
1/4"=1'-0"



SECTION A-A
1/4"=1'-0"



SECTION B-B
1/4"=1'-0"



SECTION C-C
1/4"=1'-0"

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1/4" = 1' foot



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Number	Revision Description	By	Date

THE WALTON FAMILY
FOUNDATION

LAKE FRANCES WHITEWATER PARK
PRELIMINARY DESIGN

CHANGING & TOILET BUILDING
PLAN, SECTIONS

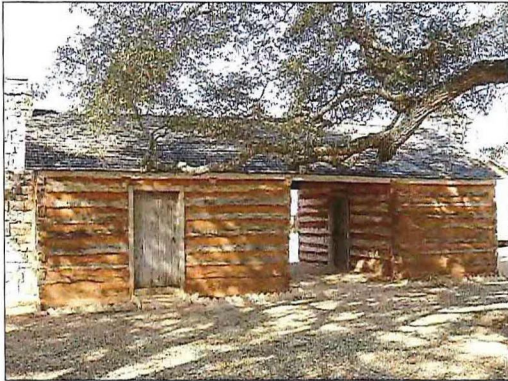
Loughlin Whitehead
ARCHITECTS & ENGINEERS

DESIGN: JA
DETAILS: JA
CHECK: REM
DATE: October 2016

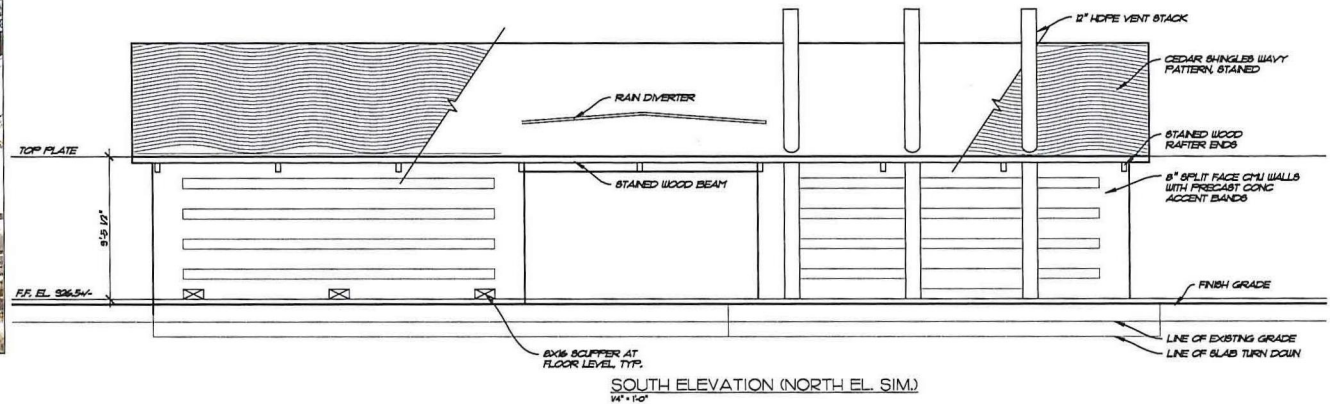
PROJECT NUMBER
6541893301

Drawing Number
A-1

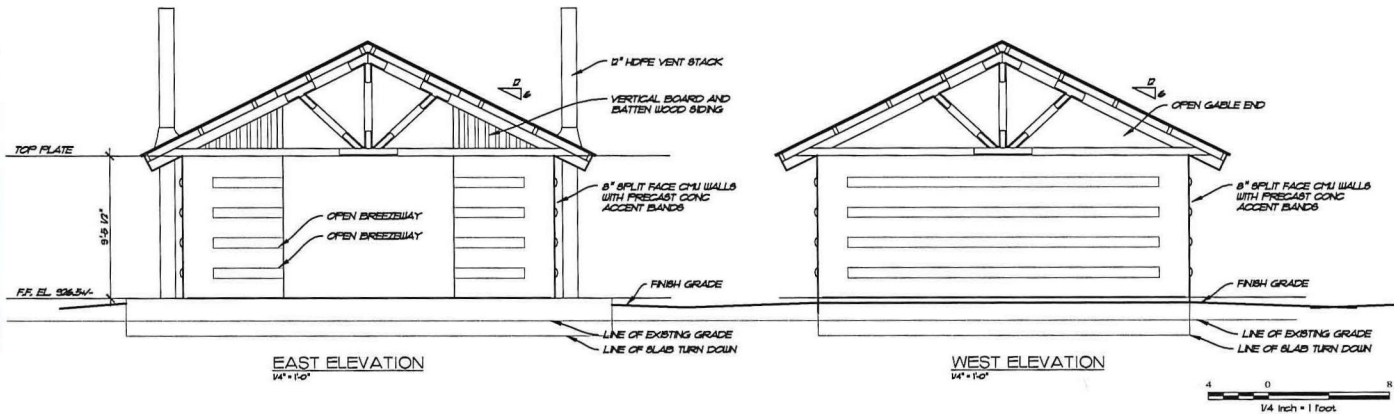
SWT-2017-00214
GRDA, Proposed Lake Frances Whitewater Park
Illinois River
Adair County, OK
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DOG TROT CABIN



WAVY SHINGLES-STAINED



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PRELIMINARY
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Number	Revision Description	By	Date	THE WALTON FAMILY FOUNDATION	LAKE FRANCES WHITEWATER PARK PRELIMINARY DESIGN	CHANGING & TOILET BUILDING ELEVATIONS	Laughlin Whitewater PARK DESIGNED BY: MICHAEL A. COOPER	DESIGN: JA DETAIL: JA CHECK: REM DATE: October 2016	PROJECT NUMBER 6541893301	Drawing Number: A-2

SWT-2017-00214
GRDA, Proposed Lake Frances Whitewater Park
Illinois River
Adair County, OK
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